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AN UNUSUAL DISTRIBUTION OF PERIPHERAL GANGRENE IN A CASE OF SUBACUTE BACTERIAL ENDOCARDITIS*

BY MAXWELL FINLAND, M.D., AND DAVID DAVIS, M.D.†

THE following case is reported because of the unusual distribution of peripheral gangrene occurring in the course of subacute bacterial endocarditis with embolic phenomena. An embolus to the left upper extremity was followed by loss of radial pulse and later by the appearance of gangrene of the distal phalanges of all five fingers. The photographs show the distribution and extent of the gangrene. The discoloration of the skin extended completely over the finger tips. As far as we know, gangrene of this distribution has not been noted in the course of this disease. At necropsy the brachial artery and the radial as far down as the metacarpal bones revealed no embolus. We are unable to explain the distribution of this gangrene on either anatomical or trophic basis. It is conceivable that an embolus may have split up into many fragments which were carried to the terminal branches in the fingers.

E. B., a single Jewish girl of 19, was seen by one of us with Dr. Benjamin Parvey at her home, March 23, 1928. She complained of difficulty in breathing and palpitation. She had been in fair health prior to three weeks ago when she took suddenly ill with chilly sensations, fever, severe headaches, general malaise, pains in the bones, shortness of breath and palpitation. On the first day of her illness her temperature was noted to be 103° and every day since, she had chills and fever and a continuation of her general symptoms. The pain was not definitely limited to any joints. She had had frequent sore throats prior to a tonsillectomy at the age of 14. At the age of 10, she was ill with pain and swelling of the ankles and was unable to walk because of the severity of the pain, but she was not confined to bed. At the age of 17, she was ill for two weeks with pain in the knees, ankles, arms, and "back" and was confined to bed with this attack. Since that time she had no acute illness. Shortness of breath with exertion had become progressively worse, although prior to three weeks ago she got along fairly comfortably.

Physical examination showed a fairly well developed, thin, somewhat anemic girl with flushed face, dry lips, and herpes labialis. Respiration was slightly increased. There was no orthopnea. The pupils reacted to light. The sclerae were of good color. The throat was essentially negative. Moderately marked carotid pulsations were noted in the neck. Heart: a diffuse apex impulse was seen in the fifth space 9 cm. from the mid-sternal line. It was of a tapping character and yet presented a rounded left edge which was not easily obliterated by pressure. The sounds were rapid, rate 110, regular, and of good quality. The first sound at the apex was loud and booming. The second sound, heard at apex and base, was of moderate intensity and good quality. At the apex there was a loud blowing systolic murmur. Over the first and second left interspaces and the vessels of the neck, a loud, systolic, rough, rolling murmur was audible. This murmur appeared to start either with the first sound or slightly preceding it and continued through the first half of systole. It was not heard over the aortic area. No diastolic murmurs could be heard. Lungs: clear and resonant. Abdomen: liver and spleen not felt. There was no tenderness. Extremities: negative. Knee jerks present and active. Skin and mucous membranes: clear, no petechiae seen.

The temperature was 102.4°. The systolic pressure 120 mm., the diastolic 45 mm. The hemoglobin was 60 (T), the leucocyte count 7800, of which 75 per cent. were polymorphonuclears and 25 per cent. lymphocytes. The urine had a slight trace of albumin, but there were no cells or casts in the sediment.

This patient was seen at her home at frequent intervals until the time of her entrance to the hospital. During this time she lost ground steadily, became gradually more toxic and dyspneic, and was obviously wasting away. Her temperature ranged from 98.5° to 104° daily, the average being 100° mornings and 102° evenings. The pulse remained regular and of fair quality, averaging 105 at first; later on, after full digitalization, it stayed at about 90.

The patient complained constantly of pains in her ankles and in the joints of her upper extremities, and was only partly relieved by salicylates in doses up to 80 grains daily. There was no redness or swelling. On April 4 petechiae were first seen in the right palpebral conjunctiva, and a blood culture taken on that day was positive for streptococcus viridans. Later, repeated crops appeared and disappeared.

The heart enlarged somewhat while under observation. The pulmonic sounds became roughened. A suggestive gallop rhythm was made out over the lower precordium on March 28 and shortly thereafter a "diastolic roll" was heard over the same area. There then appeared a long low pitched diastolic murmur, which continued unchanged.

The lungs remained clear until one week before death. The spleen was first felt on April 13. This steadily increased in size to 3 cm. below the costal margin in the mid-clavicular line and became tender.

On May 3 the patient began to complain of severe pain in the palm of the left hand and a small nodule was felt there. This disappeared after three days, but there was definite tenderness over the metacarpal bones for some time. On May 23 the patient fell asleep while lying on her left hand and when she awoke it felt numb and was cold to touch. From that time on she had severe pain all over the

*From the Second Medical Service of the Boston City Hospital.

†For records and addresses of authors see "This Week's Issue," page 1058.

left arm, more intense in the hand, especially the fingers. There was complete anesthesia below the wrist. The hand was erythematous but blanched out on pressure. Hot applications, made by her anxious mother, resulted in a large blister over the thumb.

Dorsal aspect of the left hand. (During life.)

The radial pulse could not be made out on the left, but was present on the right.

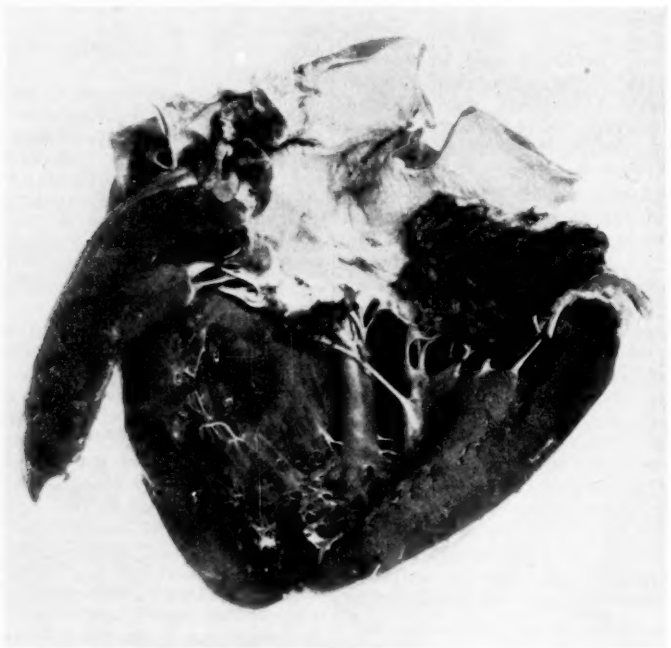
Following this episode, the patient began to be restless and kept moving her head about from side to side. A few crepitant râles were heard at the left base on the morning of the 29th. That evening she suddenly became semi-conscious, moaned a good deal and seemed to be suffering, but was unable to talk at all. A complete right hemiplegia was found.

The patient was able to move the fingers of the left hand somewhat, but black, dry gangrene of all

Lateral view of the left hand.

the finger tips had already set in and this progressed for the next three days.

On June 4 the patient was admitted to the Second Medical Service of the Boston City Hospital. By that time a definite line of demarcation had appeared at each of the finger tips. On the thumb the gangrene involved only the tip of the volar aspect and the entire dorsal aspect, with a broken bleb



The heart, showing the vegetations on the auricular aspect of the mitral valve.

over the latter. Many petechiae were seen over the trunk, in the right lower palpebral conjunctiva and in both sclerae. There were several scattered hemorrhagic areas in the retinae. The spleen was felt in the mid-clavicular line, 3 cm. below the costal margin, but was not tender. There were a few scattered râles heard at the bases. The other physical findings were about the same. The blood and urinary findings were unchanged. No pulsation was made out in the left radial on entry, but it was made out on several occasions thereafter.

In the following three days, several new crops of petechiae were observed. The patient became increasingly dyspneic and cyanotic and signs of congestion appeared in both bases. On June 6, the temperature rose steadily for 24 hours, reaching 106°; the pulse rate reached 160 and the respirations 60. Tracheal râles appeared on the morning of the 7th and the patient died early that afternoon.

The autopsy, performed by Dr. D. M. Gay, showed the classical picture of subacute bacterial endocarditis. The heart was slightly enlarged, weighing 270 grams. The epicardium was smooth and thin and presented a few petechiae. The myocardium was homogeneous and dull red. The endocardium was thin and smooth except over portions of the left auricle. The auricular surface of the mitral valve was covered with an extensive, fungating, fragile, soft mass of red and yellow vegetations which extended over the auricular wall and down along the chordae tendineae. The other valves were negative. There were about 125 c.c. of clear fluid in the pericardial cavity.

The lungs showed congestion, especially in the lower lobes. The peritoneum was negative except for adhesions of the spleen and a few petechiae in the serosa of the ileum. The spleen weighed 430 grams and contained about ten conical, firm, yellow areas of infarction. The kidneys each showed one conical region of infarction, but were otherwise normal.

The left axillary and brachial arteries and the radial artery up to the space between the metacarpal bones of the thumb and index finger were grossly negative. No further dissection of the hand was done. Unfortunately, the exact lesion to account for the gangrene here observed was not located. The brain was not examined.

Summary: A case is presented having the usual course of subacute bacterial endocarditis, but exhibiting a distribution of gangrene sufficiently unique to be considered worthy of recording in spite of our failure to locate its cause post-mortem.

Note: Our thanks are extended to Dr. W. H. Robey and Dr. W. R. Ohler for their advice and for permission to publish this case.

STUDIES IN ASTHMA

VIII. The Incidence and Severity of Asthma According to the Season of the Year*

BY FRANCIS M. RACKEMANN, M.D.†

WHEN 1074 patients with asthma are arranged according to the date of their first visit, the numbers of new patients applying for treatment in each of the twelve months form an interesting curve. (Chart I—upper curve.) This curve shows that many more new patients with asthma seek treatment in summer than in winter. Peaks in the curve occur in the months of June, August and particularly October, but there are relatively few new patients who apply between December 1 and May 1. Wiechmann and Paal[1] made somewhat similar observations on 180 cases in 1926.

Evidently season and climate play an important part in asthma. The temptation is to ascribe the summer increase to the effect of pollen and the October peak to the onset of winter colds and bronchitis, and it becomes important to find out whether the dates on which the patient first applied for treatment are governed by the seasonal incidence of the various types of asthma, by the changes in severity of this asthma or, finally, whether the time of application is merely a matter of the patient's convenience.

The question of severity is easily disposed of. The lower curve on Chart I shows the number of patients admitted to the wards of the Massachusetts General Hospital during the different months. As a general rule, patients with asthma are admitted to the wards because they are too uncomfortable to be studied in the Out-Patient Department, and consequently all ward patients may be considered as suffering from asthma which is severe.

The relationship between these two curves ought to give us a picture of the severity of asthma according to season. The lower curve is much more level than the upper. There is a fall in the ward admissions during April and May which follows the diminution of new out-patients during the early spring. The ward curve is slightly elevated during the late summer and autumn, but in no way compares with the great increase of new out-patients during the same period. Evidently the type of asthma prevalent in summer is only occasionally severe enough to require treatment in the hospital ward. It must not be overlooked, however, that summer asthma, due to pollens, may be treated not only by hospitalization but by the escape from the pollen through travel as well.

The high ratio of ward patients to out-patients in the late winter shows that those who apply in the cold weather have asthma of a severe type, and yet the total number of applicants is small. We may conclude, therefore, that the number of applications for treatment does not depend upon the severity of the asthma.

Does the out-patient curve indicate the incidence of various types of asthma? To study

*The expenses of this investigation were met from an anonymous donation known as the "M. G. H. Asthma Fund".
Read before the American Climatological and Clinical Association meeting on May 2, 1928, in Washington, D. C.
From the Medical Services and the Anaphylaxis Clinic of the Massachusetts General Hospital, Boston.
†For record and address of author see "This Week's Issue," page 1058.

this, the three great classes of asthma (extrinsic, intrinsic and unclassified) have been plotted, in three separate curves on Chart II, where they are compared with a fourth curve, marked "total". This total curve is the one which appears on Chart I and indicates the number of new cases coming each month to the Out-Patient Department, but the scale has been reduced to one third so that the curve represents also a true average of the three constituent classes.

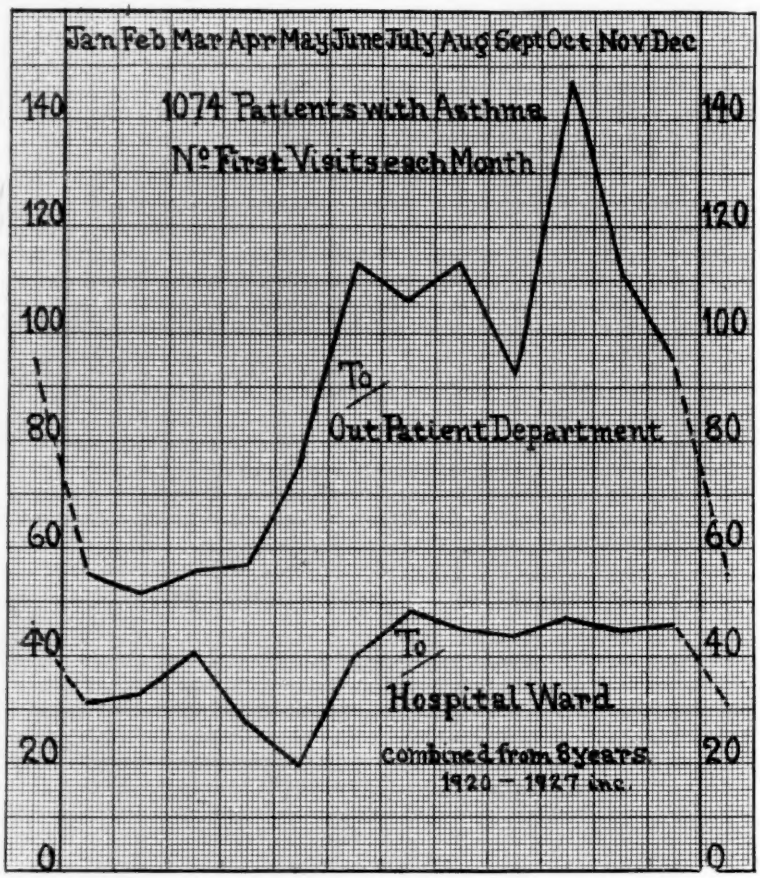


CHART I

It should be stated here that the classification of these 1074 cases has been described in detail in Study I[2] and Study II[3] and that the series includes only those patients who could be followed for at least two years after the first examination, to learn the end results and to check or modify the original diagnosis accordingly.

From Chart II it is apparent that the increase in summer is shared by both the extrinsic and intrinsic cases, and that while pollen asthma can account for the increase in the extrinsic group, it cannot account for the total increase. However, it is apparent that, during May and June, the extrinsic curve rises further and more abruptly than does the intrinsic curve, and that it accounts for a larger part of the total increase. Although sub-groups are not indicated, it can be stated that most of the extrinsic rise is due to the occurrence of pollen asthma, though many patients with unidentified or mixed extrinsic causes also apply for treatment at this time. Pollen asthma remains high in July and August, but falls off a little in September, when the high level in this month and in October is maintained by the causes labelled "mixed and unidentified". The marked rise in the extrinsic, the intrinsic and the unclassified groups in October is most interesting. The extrinsic factor in this rise is due somewhat to infections grafted on the top of simple pollen asthma, but to a greater extent it is due to the increase in the mixed and unidentified group. Evidently the positive skin tests to ragweed, which many of these patients exhibited, were more important than was appreciated, and this present study will perhaps justify us in applying a more accurate diagnosis to many of these patients formerly listed as "mixed and unidentified".

After November all the extrinsic cases fall off rapidly and relatively few apply for treatment during the winter. Even patients whose asthma is due to animals seek treatment more in summer than in winter.

Intrinsic asthma, like extrinsic asthma, appears to have a definite and unexpected increase of new patients in the summer months. The

largest sub-group is bacterial asthma, a diagnosis which has been made in 58% of the adults and children whose asthma was thought to be of intrinsic origin. In the face of this figure, it is evident that the rises and falls of the intrinsic curve must depend chiefly on the fluctuations in this group of bacterial asthma. It is difficult to explain the increase of new intrinsic cases during May and June. If this increase were more of children than adults, one might ascribe it to the end of the school year and the matter of convenience, but the rise begins in May and it is made up more of adults than of children. The peaks in June and in August suggest that the diagnosis of intrinsic asthma must be often incorrect and that the real trouble is pollen, in spite of the negative skin tests. However, as previously described, the classification of these patients has been carefully considered and as this classification was based primarily on the history, it is not likely that the diagnosis of a seasonal factor, like pollen asthma, was often over-looked. The patients with definite "summer asthma", but with negative tests to pollen, have already been classified in the extrinsic group. We are forced, then, to the conclusion that many patients apply for treatment in summer because their asthma is not so bad at that time and because it is easy for them to come in. Convenience is a real factor.

The high peak of the intrinsic cases in October is more easy to define, because in this month the bacterial cases (with a story of asthmatic attacks following respiratory infections) form 82% instead of the usual 58% of the intrinsic group, and the larger number of intrinsic patients in November and December are mostly bacterial cases and show clearly the importance of respiratory infections in the fall and winter.

One interesting feature of the intrinsic cases as a whole is that the sub-group, designated as "reflex, nose and throat" cases, have first applied for treatment during different months in very similar numbers and without any seasonal variation. The distribution of emphysema cases is likewise fairly even, while the cardiac cases form small peaks in June and in December.

The unclassified group maintains a fairly even

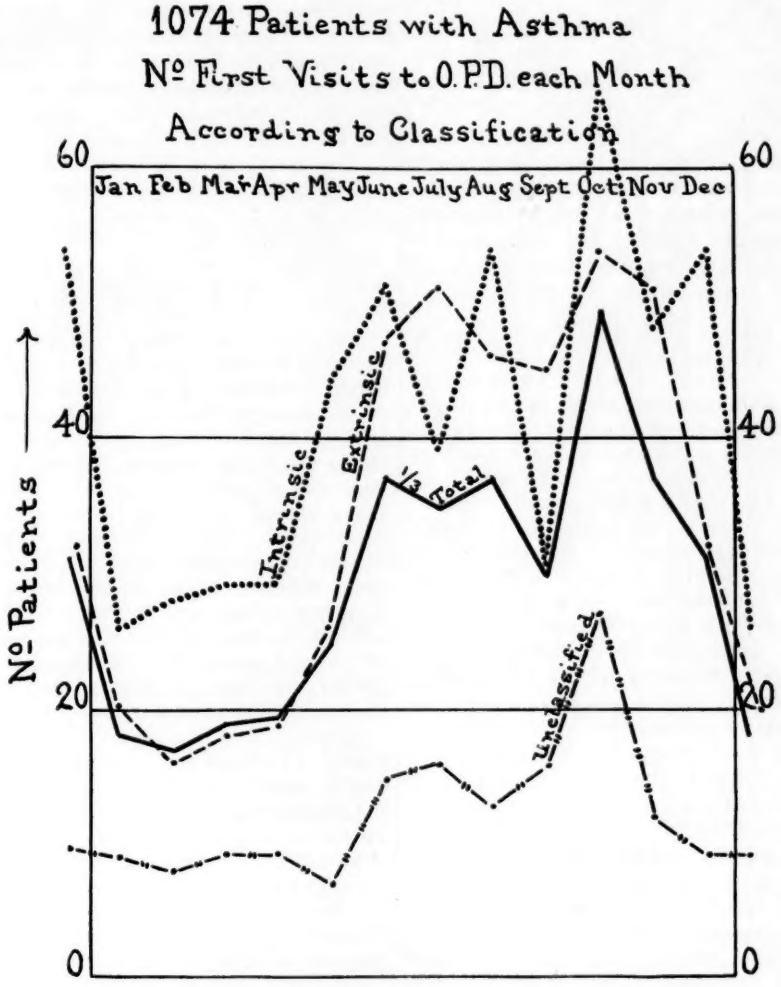


CHART II

relation to the total series, which averages 13% in each month. In May, November and December only 10% of the patients are unclassified, but in October as many as 18% of the large influx of new patients remain without classified diagnoses. The findings noted in the other groups above indicate, however, that here too infections are more important than would at first appear.

CONCLUSION

The particular month during which patients with asthma apply for treatment depends to a considerable extent upon the cause of the asthma, and to some extent upon the patient's convenience, but it does not depend upon the severity of the disease.

Analysis of the time of first visit in relation to the classification shows that in summer the diagnosis of pollen asthma is an important, but not the sole reason for visiting the hospital, for this diagnosis is made in less than one-half of all the new asthmatics who apply for treatment at that season. Whether the large number of patients in which a pollen cause cannot be identified illustrates the limitations of our diagnostic methods, or whether many patients come in during the summer because it is convenient, cannot be finally decided.

In the fall, the evidence points clearly to the importance of respiratory infections as the reason for seeking treatment.

The contrast between the curve of out-patient first visits and of ward admissions shows the difference in the asthma problem in winter and in summer. It confirms the clinical impression that extrinsic asthma is of mild severity and is comparatively easy to treat, and that it is respiratory infections which play havoc with our patients.

REFERENCES

1 Wiechmann, E., Paal, H.: "Seasonal variations in asthma." Munchen. Med. Wchnschr., 1926-73-1827.
2 Rackemann, F. M.: "Studies in asthma—I. A clinical survey of 1074 patients with asthma." Jour. Lab. and Clin. Med., 1927-12-1185.
3 Rackemann, F. M.: "Studies in asthma—II. An analysis of 213 cases in which the patients were relieved for more than two years." Arch. Int. Med., 1928-41-346.

THE FAMINE IN CHINA AND THE COLLECTION OF EPHEDRA

Chinese in the famine regions, picking a medicinal herb by the roadsides in return for food, may be the means of relieving the sufferings of large numbers of men and women in other parts of the world, according to reports reaching America from Peking.

The herb, called ephedra (*ma huang*, in Chinese), has of recent years been employed considerably by foreign druggists for making ephedrin, a drug indicated for asthma and bronchial complaints. In coöperation with the Peking Union Medical College, the Mosse Memorial Hospital, the North China Diocesan Relief Fund, and other institutions, the China International Famine Relief Commission has adopted the herb-picking scheme of "labor relief" and it is proving helpful.

The Peking and Tientsin *Times*, in a recent issue, describes the plant and tells of the manner in which the relief work is carried on:

"The herb, which grows wild by the roadside, and in the mountains, is akin to the yew tree and has a pleasant aromatic smell. The relief work consists in engaging the villagers of the district to bring in, for a price somewhat above what the very small local market offers, loads and loads of this *ma huang*. Last year's purchase justified the scheme as non-pauperizing and self-supporting.

"This year 200 tons of the herb were brought in, and that amount practically exhausted the supply within a radius of twenty miles, which is about the limit of the distance which it pays men to transport the herb.

"To see the villagers bringing in their daily cuttings was to make a study in transport. Men's backs and carrying poles, big two-men barrows and little ones, carts large and small, donkeys, cows and camels, all crowded round the gates waiting admission. When the gates were opened, it needed no little organization, and no less use of vocal organs, to sort out the line-up for the weighing of loads, carts in one place, beasts in another, and men separately. Drying, stacking and packing for export were all accomplished by famine labor."

The present is the third consecutive hard year in Shansi province, and the herb picking serves as timely relief. According to the correspondent for the Peking paper, "It has been good to see the appreciation of the men who have earned the relief workers' help in this way."

In Tantung, North Shansi, the district producing the herb, it is stated that American, Canadian and German chemists have been showing a considerable interest in this collection of the herb, which they have begun to study recently. The New York Academy of Medicine states that the drug made from the herb is being used widely in the United States.

MEETING OF THE TRUDEAU SOCIETY

Boston Medical Library, March 21, 1928

DR. LORD: Since the time of Dettweiler, there has been an increasing tendency to prescribe longer and more complete physical rest in the treatment of pulmonary tuberculosis and a number of names stand out above others in the development of this method. Its introduction into this country was due to Trudeau, for whom this Society is named. Benefit from rest encouraged the successful application of Forlanini's artificial pneumothorax. This in turn led to surgical collapse when pleural adhesions prevented the use of artificial pneumothorax, and to Brauer, Friedrich, and Sauerbruch we owe the development of this method. Surgical collapse has now been successfully applied to large series of patients by European surgeons, but relatively little use has been made of it in America.

A distinguished Canadian surgeon, pioneer in this field and the most experienced operator by this method in America, is the speaker of the evening. His topic is "The Selection of Cases of Pulmonary Tuberculosis for Surgical Intervention."

I have the pleasure of introducing Dr. Edward W. Archibald, Professor of Surgery at McGill University.

DR. ARCHIBALD: *Dr. Lord, and Members of the Trudeau Society*—I must thank you for your very kind remarks about myself, Dr. Lord, and I must thank you all for the compliment which is implied in your invitation to come and address you. I welcome that opportunity. I welcome any opportunity of talking about this subject with those who are making a particular study of it, such as the members of the Boston Trudeau Society. I welcome such an opportunity for two reasons: first, because I hope to make clear the benefits that surgery can give to certain of these cases, and thus persuade those who are more conservatively inclined that surgery has an important part to play; secondly, because I hope in the opportunity of discussion to get knowledge for myself that only the internist can give. The surgeon necessarily lacks that experience with the medical side of tuberculosis which the phthisiologist naturally acquires, that sort of intuitive knowledge which enables him to say positively so-and-so about any given case, and so-and-so about general principles. With these few words of general introduction, I may go on to the paper proper which I am to give tonight.

I have chosen for my subject the topic of the selection of cases of pulmonary tuberculosis for surgical intervention. This I thought would be an appropriate phase of the subject to bring before you, because, after all, it is the internist upon whom the duty first falls of choosing the cases. On the other hand, I thought I might speak about this with some personal knowledge since I happen to have had a good many cases brought to me by internists; and having collected a fairly large aggregate from various sources, I have been able to assemble them, and study their medical history, and compare this later with their surgical history, in a way that perhaps no single individual working chiefly along medical lines has had the opportunity of doing, or, at any rate, to the same extent. I begin with a reference to Trudeau, whom I knew, as no doubt many of you knew, personally, and whom I am sure we all loved.

THE SELECTION OF CASES OF PULMONARY TUBERCULOSIS FOR SURGICAL INTERVENTION

BY EDWARD W. ARCHIBALD, M.D., F.A.C.S., F.R.C.S.*

IF that man, illustrious in medicine and lovable of character, whose name you have chosen to designate your Society, and whose memory you seek thereby to honour, could know all the single-minded effort that has been put forth of recent years to secure by surgical means alleviation of the hard lot of the sufferer from chronic pulmonary tuberculosis, he would, I firmly believe, give his whole-hearted support to that movement. None better than he was acquainted with the trials and tribulations of those who, through his long period of active work in Saranac, came to get the benefit of his knowledge, and remained to discover the kindness of his heart. None, they knew, felt a deeper or truer sympathy with them than this beloved physician. None gave them more cheery encouragement. But how often must his heart have spoken words of hope to which his mind gave no consent! And I feel sure that, if there could have been set before him the tangible and visible results of operation in selected cases, of operation based upon sound physiological principles and an accurate knowledge of the pathology of tuberculosis, and carried out with that degree of skill and asepsis which in these times is a matter of course, he would have been easily convinced, and in spite of a long medical tradition which forbade even the idea of surgery in advanced tuberculosis, he would have delighted emotionally as well as intellectually to welcome this new development in the treatment of the

*For record and address of author see "This Week's Issue," page 1058.

disease. He was among the first to recognize the absolutely fundamental importance of rest. He it was who, as a pioneer, in this country, while accepting the tenets of fresh air and good food established by Brehmer, would never accept that other tenet of the German, hill-climbing. Artificial pneumothorax was somewhat new to him in his later days, when he himself was for so much of the time laid by with a recurrence of his old trouble; but he recognized in it a fulfillment of the principle of functional rest, and he accepted it for himself. I feel confident that he would have seen that the surgical operation of rib resection satisfied that same principle when pneumothorax was found to be impossible. May we not, therefore, feel that, in discussing tonight this question of the application of surgical therapy to the treatment of certain cases of chronic tuberculosis, we are not only doing honour to his memory, but are also sure of his approval? It may well be that he would not approve of all that has been done in this country and in others in the name of surgery, but he would recognize that any new procedure and any new enthusiasm is always at first apt to be carried too far, and he would have been greatly interested in such a discussion as I hope to put before you this evening; namely the discussion as to what particular types of the disease are most likely to profit by an operation, and what types are unsuited for it. That then is the subject which I desire to put before you from the point of view of the surgeon.

And first may I indicate the scope of the experience upon which I venture to base the following remarks? Since beginning this line of work in 1912, and counting only two patients operated on before the outbreak of the Great War, I have had under my care a total of 154 patients suffering from various forms of pulmonary tuberculosis. Of these I count 130 of the general types of chronic fibrotic and ulcerative disease; 15 cases of pyopneumothorax; 5 cases of pneumothorax restrained in its good effect by adhesions. The balance is made up of cases of disease limited to the lower lobe, or of bilateral disease, for which only a phrenicotomy was done, together with a few others for whom particular operations or modifications were necessary. These patients have, with few exceptions, been followed up to within a few months of the present date. In addition to this personal experience, one has the advantage of the literature. Unfortunately, out of the very large number of cases reported in Europe, and the quite considerable number reported in this country, in the last few years, there are not many given in such detail as to afford opportunity of deriving that intimate knowledge which comes only from the careful study of each case by itself. Statistical tables can give one general ideas, but the wisdom that comes gradually from the study of individual patients, which enables one to come to a decision in respect of each new patient, is not to be got from statistics. Brunner's collection of detailed histories of 113 patients operated on in Sauerbruch's clinic in Munich is the only large series of this sort that I know; and a study of this book would well repay anyone interested in the subject.

Coming now to the main topic of this paper, I propose to put before you tonight an analysis of my own series, as considered chiefly from the standpoint of the selection of cases for operation, or their exclusion.

I would begin by describing, as well as I can, the type of lesion and of clinical course which one may consider as fundamental, the class of patient which is by far the most numerous of those suited for operation. But before doing so I ought perhaps, to say a few words about that operation which is the most generally applicable, —the operation of extrapleural thoracoplasty. This consists in the subperiosteal resection, on the side affected, of portions of all the ribs except the twelfth. The procedure allows the chest to fall in, and accomplishes two things; it stops respiratory movements of the lung on that side, and it compresses, to some degree, the lung substance itself. In this way it gives functional rest to the lung, which is the main thing; but it also, by compression, lessens the absorption through the lymphatics of toxic tuberculous or cell products. A subsidiary effect is the relief of that tension under which the tuberculous lung lies, with its contained cavities held open by bands of fibrous tissue which traverse the lung and hold it stretched out between the mediastinum, the diaphragm and the unyielding bony thorax. A real *entspannung* is brought about. The effects, as you see, are more or less comparable with those produced by an artificial pneumothorax. The physiological principles and the pathological effects are similar, and indeed the results are similar.

The operation used to be done frequently in one stage. From the beginning I was unwilling to do it in less than two stages, and it is now generally accepted that a two-stage operation is almost obligatory, if one is to keep the operative mortality low. Sometimes three or more stages are found advisable.

It is not part of my purpose to go into questions of technique here, but I would like to add that I always use a general anaesthetic, gas and oxygen, combined with a local anaesthetic for the skin and the intercostal nerves. I mention this in order to emphasize the point that, although the operation is a formidable one in extent, and may not infrequently be followed by considerable pain for a few days, I have never found a patient who was not willing to go on with a second or third stage because of the distress of the operation. With the help of morphia, largely given before and after operation, that distress is nowadays reduced to a very tolerable level.

Reverting now to our main theme, the first

large class, recognized from the beginning of this work as the usual type suitable for operation, is found in chronic, chiefly unilateral, fibrotic and ulcerative tuberculosis, uncomplicated by any active process in the other or good lung. You are all familiar with the picture. The patient has had declared tuberculosis usually, for at least two years. He is an adult. He possesses, by heredity, or by environment, or by both, a fund of resistance. In his lung we find the expression of that resistance in fibrosis. And the degree of fibrosis is the measure of his resistance, of his power of defence, of healing. But it is rare when destruction has not also occurred, with the formation of cavities, often of considerable size. In addition there is ordinarily some infiltration of a bronchopneumonic character, which is apparently being held in *statu quo*, or is in the process of being converted slowly into scar, or into cavity. One has generally assumed hitherto the existence also of extensive pleural adhesions, as the expression of a previous pleurisy or as the result of an abandoned pneumothorax. Nearly always a pneumothorax has been attempted and has been found impossible or seriously insufficient. The clinical result of extensive fibrosis in lung and pleura is seen in scar contraction, which, corresponding to the usual situation of the chief lesion in the apex, has pulled the trachea and the upper mediastinum, with the base of the heart, to its own side; but frequently is found also to have pulled the heart as a whole across, and the diaphragm up. Occasionally, for instance, one finds the heart, in right-sided disease, pulled almost entirely into the right half of the chest. In addition the ribs are pulled inward as far as possible; the rib spaces are narrowed and insunken. In these facts, parenthetically, one sees clearly the rationale of the operation. I have expressed it upon another occasion in this way: "The diseased lung, the trachea, mediastinum, heart and diaphragm have come across as far as they can. Even the ribs have given as far as possible. But the chief blame still falls on them. They are the innocent guilty. If they cannot yield further, their goodwill must not be counted to them as a saving grace. It is obvious that they must be cut off and their generation know them no more. Metaphor aside, Nature actually seems to be crying out for relief from the pull of the ribs."

The anatomical extent of the main lesion may be confined to the apex; that is above the third rib, and the fifth or sixth vertebral spine, and the lower lobe may be almost if not quite free of disease. But in the great majority of cases there are scattered foci and peribronchial thickening in the lower lobe. In the X-ray plate one often sees a certain degree of infiltration at the hilus.

On the good side one hopes for a clean slate, but rarely does one find it. Provided, however, that the lesions here are old, definitely quiescent, not extensive, and preferably not situated in the lower lobe, they do not constitute a contraindication to operation.

It is hardly necessary to say that there should be no serious lesion of other important organs, the heart, the kidneys, and the intestines, the pancreas and the liver. But in respect of tuberculosis elsewhere, in particular of the larynx and the bowel, one need not consider such as definite contraindications, provided the disease as a whole is clearly chronic, which is as much as to say that the patient possesses good general resistance and the capacity to heal his lesion in two or three places as well as in one. One of my best results was obtained in a patient who had marked intestinal tuberculosis of chronic type; and many others have had laryngeal tuberculosis. In a word, good resistance is the keynote in the selection of cases, speaking generally, and the lack of it is a contraindication.

As you will see, the proper selection of cases for operation belongs very largely to the qualified internist. It depends upon a thorough knowledge of immunity, at least of its clinical side; upon pathological knowledge; but also—still more important—upon prolonged observation, careful consideration of the general tendency of the disease in each particular case, as shown in the history of its entire course, and in the effects of hygienic treatment; upon expert physical diagnosis and X-ray interpretation; and finally upon that clinical instinct of the experienced man, which tells him that such and such a patient can expect no more benefit from further hygienic treatment and might well get better if only he were given a chance, were able in one way or another, say by operation, to overcome those particular things which darken the prognosis, such as the gradual enlargement of cavities, the dangers of haemorrhage, and of the gradual infection of the healthy lung through the constant presence of bacilli and the constant necessity of cough. And, again parenthetically, may I ask if it is not true that that spread of tuberculosis which ultimately kills the patient, which we expect to occur in the majority of all open, chronic cases, is due as much to the forcing of sputum, by the splashing effect of cough, into the healthy alveoli, even though much of it is expelled through the mouth, as to a spread by lymphatics, or by the blood route to other parts of the body?

It is seen, therefore, that this large class is constituted by the "good chronics", unilateral or chiefly unilateral, and usually carrying cavities. It is true that for long periods they are afebrile; that the pulse rate is not materially increased; that they are allowed exercise or even some work; and that cough is often not really troublesome. Nevertheless, they are open cases, for cavity is the rule, the sputum is positive, and they should not be allowed to resume community life; besides which, if they should attempt again to earn their living, they would be exposed to

serious danger of relapse. They must look forward within a period which is to be measured certainly not by decades, at best by lustra, more often probably by years, and occasionally even by months, to death from progressive tuberculosis. They must spend the rest of their days as invalids in sanatoria or at home. In spite of all the cheery, encouraging literature so freely and so rightly provided to them nowadays by sanatorium leaflets and the "Outdoor Life," they are apt to get hold in the follow-up section of annual sanatoria reports of figures which are rather disquieting; and they all know pretty well their own pathological condition from more or less frank talks with their physician and from porch conversation. So that often the *spes phthisica* has a hard time in justifying its existence. Physician and patient alike are usually reticent about the ultimate prognosis; both become discouraged, and finally the patient asks if there is nothing more to be done. Pneumothorax by this time is no longer, or never was, a factor. Here, then, is surgery's opportunity! And it may as well be said that the experience of the last ten years has brought the conviction that this opportunity has in general not been offered by the physicians to the patient as early as it might have been,—not by years in many cases. While waiting for time to study its possibilities, while gradually making up one's mind as to its advantages, while giving prolonged consideration to the very great responsibility of advising operation, of embarking upon a new venture involving perhaps new perils, time slips by; and often the cavity which at first was so small as to be easily obliterated by an operative release of tension, becomes so large that such an obliteration is almost impossible, if only for purely mechanical or anatomical reasons. Often, indeed, the even chronicity of the process is interrupted by an acute invasion of the other side, or occasionally by a serious haemorrhage which either leads to the same thing, or closes the whole scene abruptly. I shall speak later, though briefly, of the immediate dangers of operation, dangers which must always give one pause; but I shall hope to show that in these "good chronics" the balance is in favour of operation; and I am not afraid to say even now that in the type of case which I have described, so far as my experience goes, operation is unhesitatingly to be advised.

Of this first class of "good chronics," I have operated on 31. Of these 2 died; one seven weeks after operation of typhoid which developed in the hospital after an excellent operative recovery,—a most promising case; the other of an acute pneumonia on the good side eight days after operation, which had been done in one stage —an operative mortality of 6.4% and that avoidable. Out of 21 cases, operated upon over one and a half years ago, 10 are practical cures, i. e., almost 50%; and all the others are improved, most of them greatly so.

I come now to a second large class, which I may describe as the chronic who is slipping. The pathological lesion is similar to that in the first class, although usually more extensive. The patient may have been doing quite well for the first year of treatment, but for some months or more he has been running intermittently or continuously a sub-febrile temperature, and his pulse rate is ten to twenty beats above normal. Repeated examination shows that his lesion is spreading a little, or that cavities are increasing in size. He has come through, perhaps, one or more bouts of fever up to 101 or 102, lasting for several weeks; has had mild attacks of pleurisy; he is not holding his weight; his appetite is uncertain, and he has lost his general sense of well-being. The general impression is that his resistance is slowly failing. He may even have had a flare-up, with the appearance of a small "snow-storm" running out transversely from the hilus, or into the lower lobe, which, under six months' bed-rest, has largely cleared up; or he has had a rather sharp allergical exudate around old foci, previously recognized as quiescent, and this may have naturally disappeared. In short, he is slipping. Brunner describes those of the first class, with respect to the prognosis of operation, as "günstige" or favourable. He calls those of the second class "bedingt günstige"—that is conditionally favourable. The difference in outlook is to be measured by the difference in resistance. The clinician who is alert knows pretty certainly that these patients now offer a much darker prognosis than those of the first class. He looks forward to deterioration in no long delay, and he hastens to suggest an artificial pneumothorax, which is often in the event not total, but leaves the adherent apex uncompressed. But as the more recent and more acute lesions are often below the old apical lesion, with its uncollapsed cavity, he still obtains a marked improvement through compression of these recent lesions, and hopes to guard the patient against further invasion downwards. The clinical improvement is often striking, and the patient reverts to the class of "good chronics." Such cases, with artificial pneumothorax, I put in a separate class, and will discuss them later. For the present let us assume that pneumothorax is found impossible because of pleural adhesions. Is operation then to be advised? I say decidedly "yes." The operation will accomplish practically all that the pneumothorax would have accomplished, and more, since it also collapses and puts at rest the adherent apex. Of this second class, of "slipping chronics," I have 41 cases, of whom 9 (22%) are dead, 4 (10%) of progressive disease and 5 (12%) from operation. Of the 5 operative deaths, 3 occurred from acute tuberculous invasion of the good lung, and 2 from cardiac failure and paradoxical respiration soon after operation. The evil effect of failing resistance is clear. Nine (22%) are practical cures; the others are improved, some greatly,

some slightly so. Nine are too recent to be considered in regard to results.

One comes now to a third class, still remarkably large, which may be called the "bad chronics." These are they who show steadily advancing disease, though apparently limited fairly well to one lung. Cavities have grown larger during observation, and new cavities have formed; sputum is more purulent than mucoid; the patients have been running fever well above 100° F. for months; the pulse is elevated and not of good quality; they are losing weight steadily; the appetite is poor; they look sallow, and we think of them as having mixed infection. The good side, however, appears to be remaining good. Eventual lesions in it have remained quiescent. The trouble is coming from a gradual disintegration of the lung tissue on the bad side, with occasional tuberculous invasion of new areas. Their resistance is failing sharply, though not with great rapidity, and the outlook during the next year is exceedingly sombre. These form a good proportion of Brunner's third class, which are called "ungünstige." Operation is still advisable, in view of the fact that a few do very well, while the majority obtain an improvement which is very much worth while. Of this class I count in my series 24, of whom 14 died; 6 were markedly improved, and are still alive and enjoying quiet community life from two to five years after operation; 2 were given a practical cure, with ability to work, four to six years after operation; and 2 are as before, and likely to die in due course. Of the 14 who died, 6 succumbed as a direct or indirect result of the operation at dates varying from two days to four months after operation; while the others, after preliminary improvement, relapsed and died of the progress of their disease. When it is considered that all of these would almost certainly have died without operation, within a limited period, I think we may agree that the operation was not unjustified.

I come now to a fourth class, in which, although the process is still unilateral, cavitation and fibrosis are both excessive. The patients have had the disease for a great many years; they have fought a good fight, as evidenced by the presence of great contraction, but there are large cavities both in the upper and in the lower lobes. The presence of myocarditis can practically be assumed. They have been dyspnoeic for a long time. The temperature is subfebrile and the pulse is elevated. Sputum is profuse; cough is usually distressing. They are, in fact, hanging on to life by the skin of their teeth. Of this class I have operated on five, doing a thoracoplasty. In one of these there was also present a recent active process on the good side, in the lower lobe, and a pleurisy overcome three months previously. One had had a thoracoplasty done elsewhere, and I did no more than add a phrenicotomy. The other four were all cases of years ago when my experience was insufficient to exclude them. They should have been excluded, for not one received sufficient benefit from the total posterior thoracoplasty to compensate for the distress of the operation. In three of them I proceeded, after the failure of the thoracoplasty, to do an apicolysis; that is, a freeing of the apex through an incision in front, in order to collapse persistent large apical cavities. All three died within two weeks, as a direct result of the operation. The fourth died three months after the thoracoplasty, and the fifth about one year after thoracoplasty and six months after phenicotomy. The lesson is that in the presence of large cavities in both lobes, cavities of such size and such number that one can hardly hope for their obliteration by compression, lying in a diffusely fibrotic lung, it is useless to operate.

In these four classes I have considered the problem of chronic disease affecting a considerable fraction of one lung. But I imagine that at this point a fifth type will naturally occur to you, a type which is far from infrequent,—that of the rather narrowly limited apical disease, apparently not extending below the second or third interspace, with adherent pleura, and containing a fairly large cavity. The boundaries between this type and that of Class I are often not well defined; and perhaps a few that I have included in Class I might have been judged as coming more properly into this fifth group. That is probably true since I have only one case illustrative of this strictly limited apical disease, with large cavity. The internist naturally enquires whether such a limited disease may not well be treated by a limited operation. Sauerbruch has always been strongly inclined to insist upon a total thoracoplasty, even when the lower lobe appears to be healthy, partly for the reason that there are still probably undiscovered lesions in the lower lobe, partly because he considers it necessary to compress the lower lobe first, in order to prevent aspiration into it of the contents of the apical cavity if that were alone collapsed by an upper thoracoplasty. On the other hand, it seems a pity to reduce seriously the function of a good lower lobe if that is unnecessary. Sauerbruch, however, has clinical support for his contention, but he accepts the preliminary compression of the lower lobe by a pneumothorax, after which he is willing to resect ribs over the upper half of the chest only. Some months later the lower pneumothorax may be allowed to lapse, and thus the function of the lower lobe be preserved. I can only say that in this one case I adhered to Sauerbruch's rule and by resecting the upper eight ribs obtained a perfect result, the cavity, which was quite large, being entirely obliterated in less than a year, and the patient restored to full work in somewhat less than that time. This was five years ago, and the patient is still entirely well.

There is another particular set of circumstances, a sixth class, which I may now con-

sider briefly,—namely those rare cases in which the lower lobe alone, or almost alone, is diseased. The question here is, can one expect sufficient benefit from phrenicotomy, or should one go on and perform, in addition, a lower thoracoplasty? Here, too, I have only one case to report, and it is only some seven months since the operation was done. Up to the present this man has achieved a marked improvement, which seems to be still increasing. But I may as well say that I cannot believe that it will suffice to cure the disease, and I expect to be obliged to add a resection of the fifth to the eleventh ribs. We are all familiar with the rather unfavourable prognosis connected with lower lobe lesions. Lung movement in the lower lobe is greater than in the upper; expulsion of sputum is more difficult and the development of bronchiectasis more certain than in the upper lobe; so that I am unwilling to trust such cases to phrenicotomy alone.

I pass now to the consideration of that group of cases in which the good lung, by reason of an undue amount of disease either present or past, must be taken seriously into account. And I take first the rather small class of those who have bilateral apical disease, with bilateral cavity, the lower two-thirds or three-quarters of each lung being practically free. I can say very little about these as I have no personal experience; but I saw recently in consultation one example, and as the cavity was not too large, I advised an apicolysis first on one side, and then, if things should go well, on the other side some months later. I gave this advice because the disease was essentially chronic and narrowly limited, and because the ultimate outlook was not good. One had to expect increase in the size of the cavities and probably gradual extension into the lower parts of the lung. I know of no similar case recorded in the literature, but I see no reason why operation should be refused when the patient is in good general condition.

This small group having been disposed of, I would divide this seventh class, characterized by lesions in the good lung that suggest caution, into two sub-groups.

The first sub-group is made up of those who have given evidence, during the previous year or two, of activity or of fresh acute invasions of the good lung, as diagnosed by the history, physical signs, and x-ray films, but in whom the active lesions have been brought to quiescence or even largely cleared up. The importance of a detailed history, and a good series of x-ray films is obvious. In these cases, I urge caution. One must not rely entirely on the x-ray. Very ugly "snowstorms" sometimes clear up amazingly; and we are confident that some of these represent little more than an exudative response in allergical soil, like the inflammatory exudate in a tuberculous knee or gland after a tuberculin test. But they indicate recent activity and some loss of resistance. Much more must one depend on a clinical estimate of the character of the patient's disease, whether towards healing or the reverse. Has he good resistance or has he not? In any case, assuming a quiescence or a clearing up, I prefer to wait for at least six months after either is complete before operating. There is no fact more solidly established than that the strain of operation is very liable to provoke to fresh activity lesions that have only lately passed through a stage of activity. Old stuff can stand it; recent stuff cannot. It is wise to begin with a test phrenicotomy. Of this class I have sixteen examples, and their various fates have taught me the lessons just expressed. In five I postponed operation from two to eight months; of these two had a flare-up after operation, one of whom died; two came through well and are markedly improved after five years and one year; and one never got beyond a phrenicotomy, as the disease progressed bilaterally. Of the remaining eleven, three died; one in twenty-four hours of myocarditis; one in twelve days of cardiac failure and paradoxical respiration; and one in seven weeks of pneumonic phthisis in the good side. Of the other eight, three struggled through an immediate flare-up in the operated side (not the good side), and are now doing well after one, one and a half and two years; three came through without trouble, of whom one died two years later of haemorrhage; and two survived an acute invasion of the good side, but are feeling worse than before.

In a general way, the dangers of this class are seen in the fact that of the fifteen that had a thoracoplasty done, five are dead (four of operation and one of progress of the disease); and three are worse than before, because of post-operative flare-ups. Only seven are improved, but none is yet a cure.

The second sub-group is formed by those who have at the moment positive areas of activity in the good lung, either known, or unrecognized and only discovered later upon a more careful re-examination of the records. The general rule is formal; not to do a thoracoplasty under such conditions; and the reason is obvious. The patient is in a stage of poor resistance. But there do occur cases in which the lesion on the good side, though suspected of activity, is not certainly active, or is very limited. For these one is willing to do a test phrenicotomy, following Sauerbruch. The slight extra strain put upon the suspected lung is a test. If the lesion progresses, no further operation is done. If, after three or six months, the patient is improved, one may go on to do a thoracoplasty, preferably in three stages. Of such I have done four. Of these, in two the further course forbade operation. One is still waiting. And in one operation was proceeded with. After a partial thoracoplasty this patient died of acute tuberculous invasion of the good side. Her disease had not

been recognized before operation. The risk in such cases is clearly great.

We may now go on to discuss that fairly large class (Class VIII) in whom a pneumothorax, spontaneous or artificial, has been maintained or induced, either (a) for early acute exudative forms with so great consequent improvement that a good resistance has been secured, or (b) for straight chronic productive cases to overcome an intercurrent acute spread or a simple, progressive, quiet advance of the lesions, especially cavity. It is important to make these distinctions, and a good series of x-rays is valuable.

In the first instance I am inclined to trust the patient to the good offices of the artificial pneumothorax, provided it is total; or if not total, provided the uncompressed area of lung (apex) does not show cavity. I leave gladly to you medical men the task of deciding when to allow the artificial pneumothorax to lapse, if ever. But if, as in (b), the disease before the induction of artificial pneumothorax was chronic, with cavitation, I go in constant fear of a rupture of the cavity into the artificial pneumothorax and of empyaema, and particularly so if the cavity remains uncompressed. In general, I incline towards the use of artificial pneumothorax for exudative active lesions; and to thoracoplasty for chronic productive sclerosis with cavitation. I see so many empyaemas that have developed in pneumothorax cavities. In such cases, even when the pleural cavity is dry, and after allowing a reasonable time, six months or a year, for the artificial pneumothorax to do its good work, I think on the whole that it is better to substitute a thoracoplasty, because a thoracoplasty obliterates the pleural space, and prevents or forestalls empyaema. In several cases, a later rupture of the cavity has broken harmlessly through the chest wall as a cold abscess, and a life has probably been saved.

It is true that not many such are referred to me. (I am not here including cases with fluid or those with restraining adhesions.) I have had only seven. Of the seven, I did a half-thoracoplasty in five, leaving an artificial pneumothorax below or above; a total thoracoplasty in two. One died of empyaema from perforation into his pneumothorax cavity; one died after three years of progress of the disease; the other five have done extremely well, four being cured and one greatly improved.

Then there is the class (Class IX) that have got a fairly good collapse from artificial pneumothorax except for band adhesions which hold out parts of the lung. For such Jacobaeus and Matson advise cutting the adhesion with the cautery. I make a distinction. If the band adhesion, seen in the x-ray, overlies and draws into its own base a cavity, I am still afraid of later empyaema, and I advise giving up the artificial pneumothorax and substituting a thoracoplasty. To this conclusion I have come only lately, but I have two recent cases which have done very well. I sent them home safe from empyaema.

But if no cavity is seen at the base of the adhesion, I agree, with reservations, that a liberation of the lung is advisable. Only I prefer an open incision to the thoracoscope and cautery. Of these I have five cases, in three of which I succeeded, and in two had to back out. Of the three, two got an excellent result and are well after three and four years, still with their artificial pneumothorax. One had an empyaema following operation, (a difficult one) and now requires a thoracoplasty. Jacobaeus acknowledges 15% empyaema, and three deaths, in 70 cases. The argument for a thoracoplasty as against cutting adhesions is fairly strong.

I next take up the class (Class X) in which an artificial pneumothorax is complicated by fluid which resists absorption, which persists after several aspirations. In some tubercle bacilli are demonstrated; in others not. But probably all are tuberculous pleurisies. I am afraid of them. Too often they go on gradually from the usual clear or turbid straw-coloured fluid to a frank greenish pus; and from this to a terminal mixed infection which is usually fatal. I very willingly advise a total thoracoplasty under these circumstances; and my experience has been favourable. Even when no organisms can be found, the fluid usually kills a guinea pig. These tuberculous serous effusions, if persistent, constitute a real tuberculous empyaema. Of them I have operated on 7, always in order to forestall a later conversion into a purulent tuberculous or mixed empyaema. All stood the total thoracoplasty well. One had only the lower ribs removed, a year ago, and on account of feebleness, was postponed and awaits further operation; one had persisting symptoms of cough and expectoration a year later and had a phrenicotomy done, with the result that he is still a "good chronic"; one did very well, and is greatly improved one and a half years after operation; and four are practical cures.

Between this serous empyaema just described, and the frank, mixed-infection, usually fatal empyaema, there comes a class, characterized by a thick greenish pus, in which organisms are hard to find, possibly a few cocci, occasionally tubercle bacilli; but the pus kills a guinea pig. I have seen quite a few such cases, and have operated on four. Many of the grave mixed-infection empyaema patients give a history of passing through this intermediate stage. You must be familiar with this progression. Such cases are generally aspirated, and irrigated with gentian violet, etc.,—measures which do not often succeed. I urge strongly a total thoracoplasty. Of my four operations, two are still under treatment, and need further rib resection; but the other two are well, and one of these had a bronchial fistula.

As to the third class of empyaema, with high fever, rapid pulse, loss of weight, etc., these pa-

tients are a great problem. Many have an open bronchopleural fistula, which forms a desperate complication for treatment. Most of them have developed a pneumothorax, artificial or spontaneous. Of these I can report on 13. Eight are dead; 7 treated only by drain as a last resort, and one by a partial thoracoplasty. One is well after an extrapleural thoracoplasty; one is much improved; one is stationary, and two under treatment and improved. I consider a preliminary drainage in the bad cases as advisable, to be followed ultimately by a total thoracoplasty, if they improve enough. If they do not, no thoracoplasty would do any good.

Discussion

Dr. Lord: Those of us who for many years have been interested in tuberculosis I think realize what a marvelous result this is. There is an extent of tuberculosis infection which we have been accustomed to look upon as practically hopeless, but the surgeons have now come into this field and can rescue a large proportion of these patients. Dr. Archibald's statistics are very impressive. It does not really need statistics to prove this point and that is one of the great merits of this procedure. It only needs a single case to convince one of its merits. Dr. Whittemore, will you open the discussion?

Dr. Whittemore: I have listened to Dr. Archibald's paper with the greatest of interest and profit to myself. I am very familiar wtih Dr. Archibald's work on this subject. I have read with great interest everything he has written, I think, and I have heard him speak several times at other medical meetings on this subject and, as a matter of fact, practically all our work at the Massachusetts General Hospital on this subject is from his teachings.

There are one or two points about which I would like to ask Dr. Archibald. I think the majority of surgeons interested in this field have a rather clear conception in their own minds as to what basis they are willing to operate on, but I am not quite sure that they have a clear feeling in their own minds as to what cases they should not operate on in all instances. I refer particularly to the group of cases that interests and puzzles me more than any other—the cases in which the x-ray shows a shadow around the root of a good lung with a little outspreading of the disease towards the periphery. The European surgeons and Dr. Archibald have always said these cases should not be operated upon. I am wondering lately whether a rare exception may not be made to this rule. If, for instance, in going over the clinical history of such a patient, having x-rays, having expert internists go over the patient, and having, also, the clinical facts of those who have followed the patient for some time that the disease is stationary—why should not this patient be operated upon? The trouble with me is that I am a little bit of a doubting Thomas sometimes. I am not always convinced that the disease is inactive. Dr. Archibald has brought up the test of taking out the phrenic nerve, and it may be that is going to be the solution of it. We have not had enough experience with this procedure as yet to say. The other group of cases are the ones in which the good lung is pretty good, perhaps a little diseased at the apex, much inactivity, but which have had severe hemorrhages. Are these cases to be operated upon as emergency operations, so to speak? I have never done it. I may be entirely wrong, but I have not done it and I do not intend to unless Dr. Archibald says I am wrong. On the other hand, some of our friends in the surgical world do operate on these as emergency cases.

Dr. Lord: Dr. Churchill, will you continue the discussion?

Dr. Churchill: It has been a very interesting paper. As Dr. Whittemore said, we have followed Dr. Archibald's methods at the Massachusetts General Hospital, and in doing so we have departed in two very important ways from the Continental customs. We owe to Dr. Archibald great thanks for pointing out the merits of the two-stage operation and also the possibility of doing the operation under general anesthesia. As far as I can find out, the German preference for a local anesthetic and the one-stage operation is largely based on the fact that gas oxygen and ethylene are not available in their clinics. One thing which interests me and which I hope we can throw some light on by physiological studies is what we mean when we refer to the strain on the other lung. When we collapse one lung, what is the strain we put on the other lung? I do not really know what we mean when we speak of added strain to the other lung, because we can show so easily that one lung can carry on the entire circulation and functions of the other. And in this connection, the type of case of which Dr. Whittemore spoke comes up for consideration. When we see complete opacity in the X-ray on one side, by further collapsing this lung do we in any way add to the load or strain of the sound lung? I do not know.

Dr. Pratt: For fourteen years I have had faith in this operation and faith in Dr. Archibald's ability to perform it successfully. I think I furnished Dr. Archibald his second case for thoracoplasty. That was in July, 1914. He did a very skillful operation and the patient did well for some days afterwards. Then a subcutaneous infection developed. This I always felt was due to an infection of the chest wall brought about by the growth of previously dormant micro-örganisms accidentally implanted there. Weeks before Dr. Archibald's operation, repeated attempts were made to produce artificial pneumothorax and I believe the needle entered the lung and on being withdrawn left pus-producing micro-örganisms in the tissues of the

chest wall. The patient died of this infection. The case probably was not suitable for the operation. It belongs in the bad class. The operation was a last resort after everything else had failed. The patient had had tuberculosis for twenty years and the disease was active and progressive at the time. The second case that Dr. Archibald operated on for me was also unfavorable. The disease was of ten years' duration and there was a series of cavities, one of which was of very large size. In this case I am glad to say results were good. The patient's sputum diminished, his weight increased and his general condition improved.

Dr. Pettingill: I mentioned, the other day, to Dr. Lord that we have at Essex Sanatorium a conspicuous example of Dr. Archibald's best results. This individual has been employed at the Essex Sanatorium for the last eighteen months as a nurse. Her disease is of six years' duration. Three years ago this month, Dr. Archibald operated. Previous to this operation she had been a resident of two different sanatoria covering a period of about three years, and all of this time was practically a bed patient. Three months after this operation she was assigned exercise and has continued on exercise up to the present time. She is now, and has been during her residence in the sanatorium, free from symptoms of clinical activity. She has a little expectoration but no bacilli have been found. An x-ray was taken today. Here is the x-ray and the person mentioned.

Dr. Gaffney: I also have a case here, a young lady who was operated upon by Dr. Adrian Lambert, last August, at the Polyclinic Hospital in New York. I felt it might interest the assembly to see the patient and perhaps see some of the x-rays which I have brought. This was a febrile case, rapidly losing ground in the sanatorium in May, 1926, and operated on in July, 1927. During that whole year she was never fever-free and there was a question of some infiltration in the left side. But she has come through in very good shape. We consider her a practical cure; and we want to know how soon she may possibly resume office work.

Dr. Lord: I would like to ask Dr. Archibald, regarding the use of lipiodol in patients with pulmonary tuberculosis, if the demonstration of a complicating bronchiectasis behind the heart and below the dome of the diaphragm by this means is of sufficient practical importance to warrant the attendant danger of spreading the infection. I will ask Dr. Archibald to close the discussion.

Dr. Archibald: Dr. Whittemore's two questions bring up two sets of cases concerning which discussion is invited. First, the cases in which there is an apparent spread from the diseased to the good side, as seen in the x-ray plate—should this form a contra-indication? I feel strongly that it should not constitute a contra-indication, provided the physician in whom you trust (that is, the one who has observed the case for a long time usually, of course, a sanatorium man or one who is doing tuberculosis work as a specialty in a city) tells you that the appearance in the x-ray at the root or at the apex is an old thing to him, that he has seen it unchanged for the last six months or year, or two years; and that the crepitations which one hears, even moist crepitations, have been exactly the same for a long time. Under these circumstances I think we can take a chance and operate. In other words, I rely upon clinical observation as much as upon the x-ray; in fact, upon the correlation of the two. I know that physical examination alone is frequently insufficient; and the x-ray alone is frequently insufficient; but I have great confidence in the two of them combined, and carried out at intervals over a considerable period. Under these conditions, I have operated on a number of cases of the type described by Dr. Whittemore, and have not regretted it. On the other hand, I lay stress upon the necessity of a series of x-rays. If, in a series of films and a series of clinical examinations by good men, you find that moist sounds have lately been heard outside the heart and usually running out straight across to the periphery, although sometimes downwards or upwards; and if the film shows you correspondingly fresh soft lesions; if there have been in the previous six months little bouts of fever, and the patient is not feeling so well as before, then you should not be betrayed into taking a chance on it. I have nevertheless done that, more than once, and have regretted it seriously. But I think I should emphasize again that it all depends upon very thorough and repeated examinations beforehand. Every effort should be made to estimate whether these lesions are fresh and belong to a phase of lessened resistance, or whether they are old and represent long present lesions.

This leads us to the question asked by Dr. Churchill concerning the meaning of "strain", as regards the effect of an operation—for instance, a phrenicotomy or a thoracoplasty. I confess I do not know exactly what putting an increased strain on the other side means in terms of physiology and pathology. But upon clinical grounds, I take it to mean increased functional work on the part of the circulatory and respiratory organs. The operation of phrenicotomy, still more that of thoracoplasty, does, for instance, alter the conditions of the circulation to such an extent that the pulse-rate will be raised for several weeks after the operation by 20 to 40 beats above that of the preoperative period. This is a purely mechanical effect, due to the altered set of the heart inside the chest after the removal of half a dozen ribs; and that altered anatomical condition with its increased heart rate represents, to my mind,

the strain. On the respiratory side, the increase of two or six or ten breaths in a minute likewise represents increased work, just as happens in climbing a mountain. The result is fatigue; and we all know what fatigue may do to an active lesion or indeed a chronic one. It does not do it any good. It favors activation by lessening resistance. The "strain" of an operation is the strain or upset of the physiological and the immunological balance. To call it increased absorption of tuberculo-protein or lessened allergy does not make the matter much clearer.

Dr. Whittemore referred to the question of hemorrhage regarded as a surgical emergency. I agree with him that operation as an emergency procedure is not indicated. But one must make a distinction. The only treatment for a single large hemorrhage is absolute rest. I do not propose to operate to save a person in that stage; but I am willing to operate on a patient who has survived a large hemorrhage for a period of say three or more weeks; or upon one who is "leaking" small amounts of blood. I have operated upon a great many cases of the latter type and upon a few of the former. With one exception, so far as I can remember and have knowledge, hemorrhages have been stopped. It is one of the most constant and gratifying results of the thoracoplastic operation.

To Dr. Pratt I owe a debt of gratitude for his encouragement in the pioneer stage of this work. In 1912, I did the old Friedrich operation on my first patient, referred by Lawrason Brown, which consisted in taking off all the ribs from back to front and from top to bottom. I did it in two stages; but after the second stage, the patient promptly died, and I had to regret that I had not posted myself on the literature, as we so often do have to regret. Dr. Pratt brought me the second case. It was a perfectly rotten one. The first cases are usually that. They are the ones that are going to die soon if "something" is not done. This man had had tuberculosis for twenty years; his lung was fibroid with much cavitation. He was hectic. Dr. Pratt had tried to do a pneumothorax. It was the type of patient for whom neither Dr. Pratt nor myself would now recommend an operation. I took off only the lower ribs, and he did fairly well for a couple of weeks, and then developed a streptococcus infection under the scapula, from which he died. Dr. Pratt was kind enough to say that the infection was probably brought into the wall tissues by the pneumothorax needle. As so often happens, the first two cases died; but they taught us what not to do! The war then came on; the work since the war has been luckier.

DR. LORD: I want to express our deep appreciation to Dr. Archibald for his inspiring presentation of this subject.

HYPERPLASIA OF THE ENDOMETRIUM

With Report of Cases*

BY M. CRISCITIELLO, JR., M.D.†

HYPERPLASIA of the endometrium is a distinct clinical and pathologic entity. It is very closely connected with so-called functional or idiopathic bleeding, because a large number of cases of the latter, when curetted, show the characteristic histologic picture of hyperplasia. Like functional bleeding hyperplasia is most common at or about the menopause. Hence its recognition histologically is of great practical importance, as one is often called upon to distinguish between bleeding due to hyperplasia and hemorrhage due to early carcinoma and this is possible by means of the microscope.

The condition was first described by Cullen in 1900 and again in 1904, but it was not until 1913 that it was given by Dr. Cullen the name it now bears. In 1915, Schroeder, in Germany, independently of Cullen's work, reported 54 cases of this condition and gave it the same name. Since the publication of Schroeder's article, several Germans have written on the subject, but in this country, reports have been very infrequent. Besides Cullen, Novak has made several contributions, and the subject has been thoroughly reviewed and brought to date in a paper by Novak and Martzloff, in which an analysis of 66 cases was reported.

The most characteristic clinical sign of hyperplasia is uterine bleeding, especially in the form of profuse and prolonged menstrual flow. Grossly, the endometrium may be of normal thickness, but often it is thickened and sometimes even shows a polypoid growth. The microscopic picture is quite distinctive. Large dilated glands are found alongside of small ones, thus presenting a so-called Swiss-cheese appearance. The glands may be regular or tortuous. The epithelial cells of the large, dilated glands have normal appearance, and show no flattening. They may even be of the high columnar type. The nuclei usually stain heavily and are solid looking. The stroma is rich in cells, and in typical cases, dense and compact. Mitotic figures are more common than ordinarily seen in uterine stroma and frequently there are present dilated veins and thromboses. Rarely are round cell infiltration or plasma cells seen, and when they are found they should be considered merely coincidental and

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not a part of the picture. As a rule, both the glandular and stromal characteristics are present, but in some cases the epithelial and glandular changes stand out while in others the stromal changes predominate.

Although this condition is often called cystic endometritis, because of the large, dilated glands, this nomenclature is incorrect, as the cells making up these glands do not show changes seen in cystic degeneration. Equally erroneous, when applied to this condition, are the terms hyperplastic endometritis, chronic hypertrophic and chronic polypoid endometritis, because in hyperplasia no elements of inflammation are present. Because of the lack of inflammatory elements, some students say that the histologic picture presented by hyperlasia is merely a phase of the normal endometrial changes depending upon the physiology of menstruation. In my opinion, this is not true. There is no phase in the normal menstrual cycle which is like the picture shown by hyperplasia, and although hyperplasia does depend upon the physiology of menstruation, it is pathologic physiology.

There is still some question as to the exact etiology of this affection. It is not a local condition, and is undoubtedly caused by some ovarian dysfunction. Schroeder's article would indicate that hyperplasia is due to the lack of formation of corpora lutea in the ovaries, because he shows that in all the cases which he studied in which both ovaries were removed, he was not able to demonstrate corpora lutea. Meyer's work seems to substantiate this view. Novak, on the other hand, has been able to show the presence of corpora lutea in several cases of definite hyperplasia of the endometrium. At any rate, the problem is bound up with the physiology of the menstrual cycle and the last word on the subject has not been said.

In order to bring out the salient points of hyperplasia, the following cases are briefly reported:

CASE No. 1. A. C., age 39, was admitted to the hospital July 4, 1926, because of profuse vaginal bleeding. She had been married 12 years, and had never become pregnant. Her menstrual history had been negative until several years before admission; then her periods began to become profuse, and for two years before admission she had had real hemorrhages during her periods. Since vaginal examination failed to disclose the cause of the bleeding, a curettage was done. During operation, under anesthesia, examination showed nothing abnormal. The scrapings, however, were abundant, and the pathologic examination of the curettings revealed hyperplasia of the endometrium. The patient made an uneventful recovery and was discharged July 13, 1926.

On the day following her discharge from the hospital, July 14, she was seized with sudden excruciating pain in the right lower abdomen, the pain being accompanied by nausea and vomiting. Abdominal examination showed tenderness and rigidity in the right lower quadrant. An exploratory operation was done on the same day, the preoperative diagnosis being acute appendicitis or ruptured extra-uterine pregnancy. At the operation there was found a large amount of bright red blood in the abdomen, especially in the pelvis. The appendix was somewhat injected, but otherwise negative. The uterus, left tube and ovary were normal. The right ovary was studded with small granular cysts and there was bleeding from a large ruptured reddish cyst. The appendix, right tube and ovary were removed.

Pathologic report:—Subacute appendicitis. Rup-

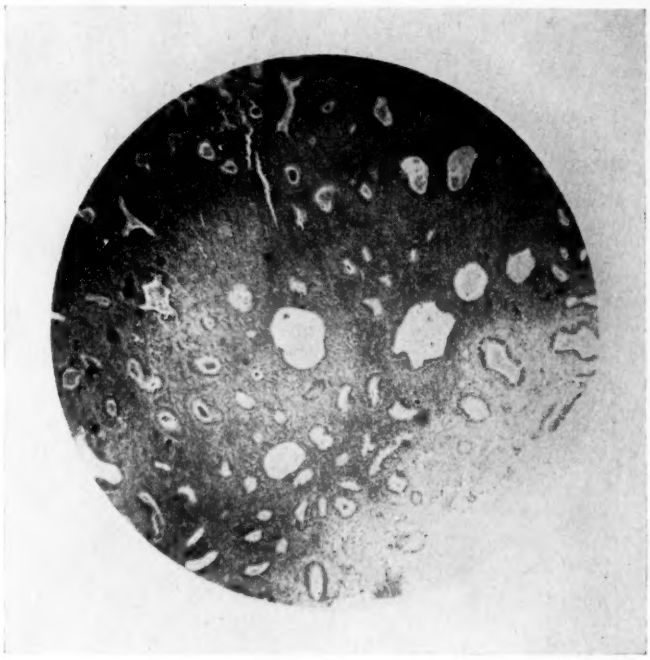


FIG. 1. Curettings from Case 1, showing hyperplasia gland pattern. This patient had a recurrence of symptoms and nine months after curettage a hysterectomy was done, at which time the endometrium showed the same histologic picture.

tured lutein cyst of the ovary about the size of an almond. Patient made an uneventful recovery and was discharged July 30, 1926.

Following the above operations she was free from symptoms for about five months, her periods being normal in amount. Then she began to have profuse periods again. This went on for several months and on April 1, 1927, nine months after the previous operation, a sub-total hysterectomy was done in order to check the bleeding. The left tube and ovary were not removed.

Pathologic report: Uterus about normal size; endometrium not thickened and microscopic examination showed hyperplasia. Patient recovered from operation and was discharged April 16, 1927. She has had no bleeding since.

CASE No. 2. J. C., age 22, first started to menstruate at 12 years of age. One year later she began to have headaches and to flow excessively at each period. This kept up until the time of admission. She had had some dysmenorrhea. At the time of admission the patient had been married two years, and since her marriage, headaches had become very persistent and bleeding more profuse. She had not become pregnant. Vaginal examination revealed the uterus to be antiflexed; the adnexa normal, and was otherwise negative. Because of the bleeding, hysterectomy was done.

The laboratory report revealed the uterus to be slightly larger than normal; no masses anywhere; the endometrium thickened. Microscopic examination showed hyperplasia.

CASE No. 3. G. L., age 48, was admitted to the hospital on December 19, 1926, because of uterine bleeding, for two months previous. She had started to menstruate at 14; no metrorrhagia, menorrhagia nor dysmenorrhea until a short time before admission. She had been married 28 years and had had five normal pregnancies. One year before admission she stopped menstruating for four months and then menstruated regularly for two months. She again stopped for five months, but had been flowing steadily for the two months previous to admission. She also complained of symptoms referable to gall bladder disease. Vaginal examination under ether showed bilateral laceration of the cervix with erosion and cystic degeneration. Blood exuded from the cervix. Adnexa normal. Uterus slightly larger than normal and firm. *Provisional diagnosis:* Carcinoma of the uterus or hyperplasia of the endometrium. *Operation:* Diagnostic curettage and cervical repair.

Pathologic report: Chronic cervicitis. Hyperplasia of the endometrium. Patient was discharged, improved, December 30, 1926.

During the month of March, 1927, the patient's gall-bladder symptoms became more acute and she had a cholecystostomy, from which operation she recovered and was discharged March 30, 1927, improved.

After the curettage, there was some improvement in the uterine flow, but after a few months she again began to bleed and on June 20, 1927, she was again curetted. Pathologic examination again revealed hyperplasia of the endometrium. She was discharged June 28, 1927. She soon began to bleed again, however, and was advised to have radium treatment. She had one radium exposure during the month of August 1927, and has had no more bleeding.

FIG. 2. Curettings from Case 3, after first curettage. This section is rather thick and not cut evenly, but it does show typical hyperplasia.

CASE No. 4. F. M., age 45, was admitted to the hospital April 25, 1927, because of dragging down sensation in the pelvis, backache, and bloody discharge, from which she had been suffering for a month. She had been married 23 years. Examination revealed the abdomen to be soft and flat; a bloody vaginal discharge, laceration of the perineum, retroversion of the uterus and cervicitis. *Operation:* Curettage, trachelorrhaphy, perineorrhaphy, appendectomy, double salpingectomy and oöphorectomy.

Pathologic examination of the curettings revealed hyperplasia of the endometrium; both ovaries were cystic. She was discharged May 16, 1927, and has not had any bleeding since.

CASE No. 5. B. G., age 45, admitted June 19, 1928, because of profuse vaginal bleeding. She first began

to menstruate at the age of 13; periods regular and uneventful until marriage. No menorrhagia, metrorrhagia nor dysmenorrhea. Several normal pregnancies; no miscarriages. Patient had menstruated regularly until three months before admission, since which time she had noticed the periods to be more profuse than formerly. For three weeks before admission she had menstruated profusely and continuously. Vaginal examination revealed nothing abnormal except the oozing of blood from the cervix. *Provisional diagnosis* undetermined, probably retained secundines. A diagnostic curettage was done and an abundance of clots were removed with some tissue. Examination revealed no vili nor decidual cells, but did reveal definite hyperplasia. Patient was discharged improved and was advised to report to doctor in case of any further bleeding, when ration. Two weeks before admission, patient began to have a severe hemorrhage, during which she thought she bled a quart. This quieted down and was repeated one week later. No pain of any kind associated with it. *Examination:* Abdomen rather full; no masses made out. Vaginal examination showed a slightly enlarged uterus; cervix normal except for some erosion; adnexa normal. *Provisional diagnosis:* Carcinoma of uterus. *Operation:* Appendectomy and pan-hysterectomy. Pathologic examination showed the uterus larger than normal. No growths nor masses of any kind could be found anywhere. The endometrium was polypoid in character and microscopic examination of the endometrium showed hyperplasia. The ovaries were contracted and fibrous. Patient discharged two weeks after operation, cured.

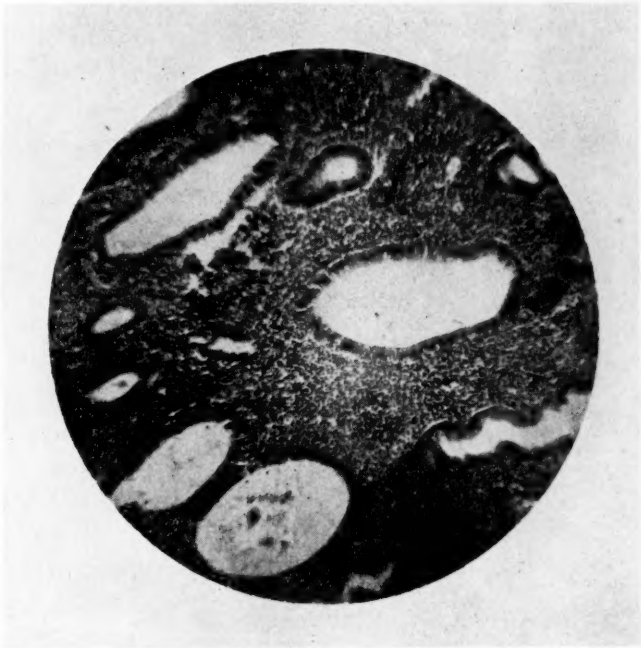


FIG. 3. This shows the endometrium from Case 3, from the second curettage. The magnification is higher than in Fig. 2. Bleeding recurred soon after second curettage and she was given one radium treatment and has had no return of the bleeding since.

dium would be considered. Patient has not reported since operation.

CASE No. 6. E. B., age 45, admitted February 13, 1928, because of profuse vaginal discharge with foul odor, and pain and cramps in the lower abdomen. Patient was married, and had had several children. She first menstruated at the age of 15, the periods being regular and painless. She had missed no periods. Five days before admission, patient began to complain of pain in the lower abdomen. This pain was pronounced in character and accompanied by weakness. Two days before admission she began to pass blood. Vaginal examination showed the cervix to be soft and dilated, the uterus slightly enlarged. Provisional diagnosis: Miscarriage. Dilatation and curettage were done and the curettings revealed hyperplasia of the endometrium. No chorionic villi nor decidual cells. Patient has had no abnormal bleeding since operation.

CASE No. 7. G. W., age 48, was admitted because of vaginal bleeding. She was married and had had two children; no miscarriages. The menopause had occurred 6 years before admission and there had been no bleeding until a short time before admis-

CASE No. 8. J. K., age 46, was admitted March 4, 1928, with the complaint of uterine bleeding. For several years previous the patient had had an increase of flow at each period, flowing freely for ten days at a time. Three months previous to admission she had had some pain in the lower abdomen and a continuous discharge of blood with mucus. Examination revealed a tenderness in the right lower abdomen. Vaginal examination showed a large, boggy uterus, and large rectocele and cystocele; otherwise negative. *Provisional diagnosis:* Fibroid of uterus—Carcinoma. *Operation:* Repair of perineum, repair of cystocele, total hysterectomy and appendectomy. *Laboratory report:* Uterus twice normal in size; muscular layer thickened, but no growths found anywhere. The uterine cavity was filled with soft, spongy polypoid growth. It was friable and pulled away readily. There was one well formed polyp, the base of which was attached to the left horn and the tip of which extended down to the internal os.

Microscopic section of the endometrium showed hyperplasia and in the larger polyp there were found definite areas of uterine glands showing a hyperplasia-like pattern. One ovary was normal and the other showed a lutein cyst.

CASE No. 9. A. F., age 30, colored, was admitted to the hospital April 16, 1928, because of profuse vaginal discharge for three weeks previous. She had been married 12 years; had never become pregnant. Nine years previous to admission she had had an operation for the purpose of straightening out the uterus so she could have children, but without success. She had started menstruating at the age of 13 and the periods had been regular until 2 years previous to admission. Since that time she had skipped an occasional period and menstruation had become more profuse. Just before admission pa-

FIG. 4. This is a section from Case 8. Although the section is thick and not cut evenly, note the sharp demarcation of the endometrial lining from the muscular layer. Grossly this endometrium was thickened and polypoid. Note the typical hyperplasia.

FIG. 5. Showing typical hyperplasia. Note the gland pattern and the dense stroma. Case 9.

tient had missed two periods, and then been bleeding profusely for 3 weeks. Examination revealed a boggy uterus, dilated os, and a small irregular mass on the right side, which felt as if it were attached to the uterus. *Provisional diagnosis:* Myomatous uterus, retained secundines, hyperplasia of the endometrium. Curettage was done, and a moderate amount of curettings was obtained, which showed typical hyperplasia. The patient was discharged April 24th and was advised to report to doctor if further bleeding occurred with the understanding that radium treatment would be considered at that time.

DISCUSSION

Although conclusions cannot be drawn from so small a number of cases, yet these cases do show the same general characteristics that have been brought out by other men in reports of a greater number. For a fuller discussion of the subject, the reader is referred to the paper by Novak and Martzloff. The cases are reported merely to bring out certain points.

In the first place, it will be noted that every patient was admitted to the hospital because of bleeding, or in some instances because of a history of prolonged and profuse menstruation over a period varying from several weeks to several years. Although menorrhagia was the most usual sign, metrorrhagia also occurred, and in cases No. 3 and No. 9 amenorrhea had been present.

In the four cases in which the uterus was removed, the following findings were noted: Grossly, in one case, the endometrium was of normal thickness, in another it was slightly thickened, and in each of the other two, the endometrium was polypoid, one showing a definite polpyp. In no case did the endometrium invade the muscular tissue as seen in malignancy. Microscopically all these cases including the polyp showed definite hyperplasia and in all of these four cases the endometrium was the only pathologic part of the uterus, and therefore the only cause for the bleeding. Although other lesions such as adenomyoma may coexist with hyperplasia, none was noted in this small series. In practically all the cases in which knowledge could be obtained, the ovaries were found to be cystic. In no case were there signs of inflammation of the endometrium.

Although hyperplasia may occur any time during a woman's sexual life, it is most common about the menopause. The cases in this series bear out this fact.

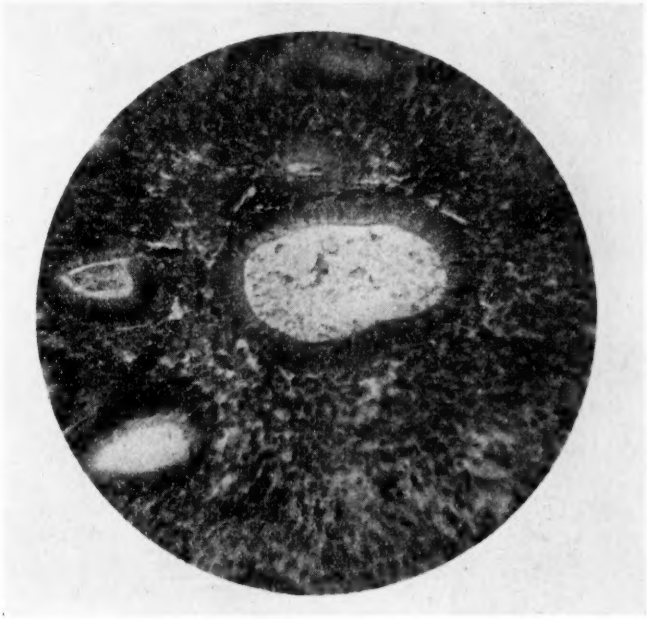


FIG. 6. High power of gland from Case 9. The epithelial cells are not flattened and show no degenerative changes.

Pregnancy is rarely tolerable in women who have had hyperplasia. Novak, however, has reported two cases of patients who have become pregnant after the onset of bleeding, which presumably marked the beginning of hyperplasia, and went to full term. One case of mild hyperplasia, not reported, in this series, aborted at the fifth month.

As to the treatment, no general statement can be made for all cases. We have at our disposal several agents: organo-therapy, curettage, x-ray, radium, and finally hysterectomy. Although each case should be treated individually, according to circumstances presented, I want to make a plea for conservatism. Apparently some cases are cured spontaneously inasmuch as women often give a history of having had profuse menstrual flow over a certain period, which has, for some unknown reason, become normal again.

A few patients, although very few, will respond to organo-therapy, a combination of

ovarian and mammary extract having been found effectual in some cases.

Curettage is of value as treatment and is indispensable for diagnostic purposes. A small number will have no more bleeding after curettage. In radium and x-ray we have excellent agents, one dose of radium or three doses of x-ray usually being necessary; although they will not cure every case, they will take care of the majority of them. Of course, the objection to both radium and x-ray is that they might bring about sterilization of the patient, but in good hands this need not be so, and since a large percentage of cases of hyperplasia occur about the time of the menopause, sterilization would not make much difference.

Hysterectomy should be done only as a last resort, or if there are other coexisting lesions which would warrant this operation. Young women who are desirous of having a family should have the benefit of simpler and less radical treatment before resorting to a hysterectomy.

Since the majority of cases of hyperplasia fall within the ages when cancer is prevalent, its relation to malignancy is of interest. The interpretation of the abnormal bleeding at this time is of utmost importance. As far as is known, hyperplasia is not a pre-cancerous lesion. Of course the proper attitude to take towards any abnormal bleeding during the menopause is to consider it due to malignancy unless proved to be otherwise. Yet all efforts should be made to prove that it is not due to some other lesion other than cancer. If cases No. 7 and No. 8 had been subjected to diagnostic curettage, hyperplasia would have been found, just as it was after hysterectomy, and radium treatment might have avoided an operation. After all, even under the best conditions, hysterectomy has a certain mortality.

Many women who have abnormal bleeding during the cancer age put off consulting a physician for fear they will be told they have cancer. This, of course, is unfortunate since, if malignancy should exist, it may go on beyond repair. If women could be made to realize that there are other lesions which give abnormal bleeding but which are not malignant, they would probably consult a physician earlier and thus some cases of malignancy would be recognized before becoming too far advanced.

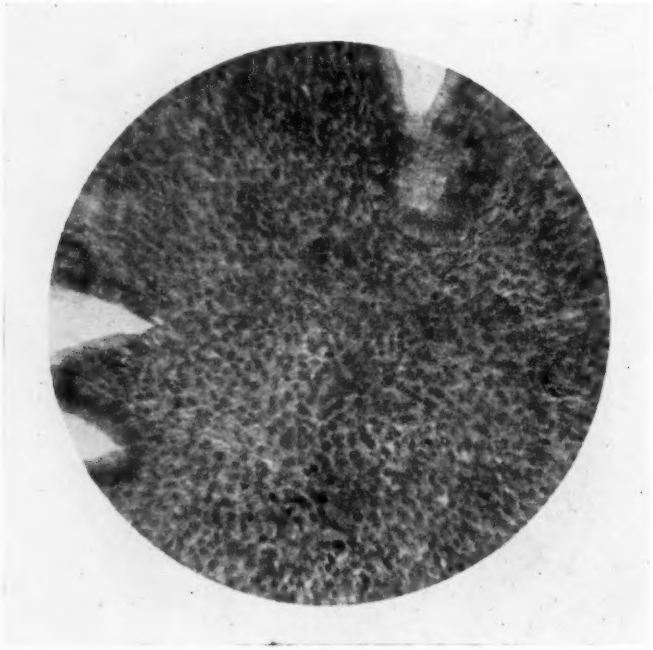


FIG. 7. High power of stroma from Case 9, showing the denseness and compactness of the stromal cells. Mitotic figures are not uncommonly seen in this type of stroma.

There is one more point that these cases bring out. Cases 1, 3 and 5 were in charge of the same member of the hospital staff. Case 1 was cured by hysterectomy. Case 3 was cured by radium and an operation was avoided, and Case 5, after curettage and diagnosis, was sent home and advised to report any recurrence of bleeding, at which time radium would be considered. This progress of conservatism in the treatment was the direct result of co-öperation between the surgeon in charge and the laboratory personnel. Co-öperation between the surgeon and the pathologist is not only desirable but essential. A short clinical history of each specimen is not only of interest to the pathologist, but is necessary in some cases for correct interpretation of the lesion. The pathologist should also be present at as many operations as possible so that he can see the specimens in vivo, so to speak. The

surgeon should try to correlate and check up the clinical with the laboratory findings. From such co-öperation only good can result. "The laboratory man" will be a better pathologist and the "operator" will be a better surgeon and ultimately the one to benefit most will be the patient.

SUMMARY

Nothing original is claimed in this report. Hyperplasia of the endometrium is described, and 9 cases reported in order to emphasize the existence of such a lesion. Hyperplasia does not represent endometrial changes in normal menstruation and has nothing to do with so-called hyperplastic, hypertrophic, or polypoid endometritis. It is due to some ovarian disturbance, rather than to infection and hence is not an inflammatory reaction, and the treatment must be approached with that point in mind. A plea is made for conservatism in the treatment of this condition and for more co-öperation between the surgeon and the pathologist.

BIBLIOGRAPHY

Novak: Hyperplasia of the Endometrium. Am. Jour. Obst., 1917, lxxv, 75.

Novak: Relation of Hyperplasia of the Endometrium to So-called Functional Uterine Bleeding. Jour. Am. Med. Assn., 1920, lxxv, 292.

Cullen: Uterine Hemorrhages and Their Causes. Ann. Gynec. and Pediat., 1904, xvii, 413.

Schroder: Anatomische Studien zur normalen und pathologischon Physiologie des Menstruationszyklus. Arch. f. Gyn., 1915, cxx, 104.

Driessen: Endometritis, Folge abnormaler Menstruation, Ursache profuser Blutungen. Zentralbl. f. Gyn., 1914, xxxviii, 618.

Meyer: Beiträge zur Lehre von der normalen und krankhaften Ovulation und der mit ihr in Beziehung gebrachter Vorgänge am Uterus. Arch. f. Gyn., 1920, cxiii, 259.

Seitz: Ueber anatomische Befunde am Endometrium bei Meno- und Metrorrhagien. Ztschr. f. Geburtsh. u. Gyn., 1921, lxxxiii, 668.

Seitz: Beiträge zur Pathogenese der Meno- und Metrorrhagien. Arch. f. Gyn., 1922, cxvi, 252.

Novak and TeLinde: The Pathological Anatomy of the Corpus Luteum (Abscess, Cyst, Hematoma, Neoplasm). Bull. Johns Hopkins Hosp., 1923, xxxiv, 289.

Novak: An Appraisal of Ovarian Therapy. Endocrinology, 1922, vi, 591.

Novak: Menstruation and its Disorders. Gynec. and Obs. Monograms, Appleton, pp. 235, 246, 249, 250.

Novak and Martzloff: Hyperplasia of the Endometrium. Trans. Am. Gynec. Soc., 1924.

Mangiagalli: Endometrite. Rassegna clinico-Scientifica dell' Instituto Biochimico Italiano 15 Maggio, 1928.

Codman: Use and Abuse of Radium. New England Journ. of Med., 1928, cxcviii, 1005.

PYRETOTHERAPY IN THE TREATMENT OF GONORRHEA BY INDUCING ASEPTIC ABSCESS

BY SAVAS NITTIS, M.D.*

THE present study was made in the hope that refractive cases of gonorrhea, which had resisted all of the usual methods of treatment, might be benefited by the production of continuous fever. Treatment of gonorrheal infection with heat is based on the belief that its etiogenic factor is sensitive to high temperature.

The resistance of the gonococcus to temperature changes, and the exact point above which it ceases to multiply, or dies, is not unanimously agreed upon by the various authors, probably for the reason that there are a number of gonococcus strains. (Twenty-seven have been described so far)[1]. For the majority of these strains of the gonococcus it has been established that the organism dies after several hours' exposure at a temperature of 40° C.[2], that it ceases to multiply at 38° C.[3] to 38.5° C.[4], or certainly at a maximum of 39° C.[5], and the duration of viability of the individual gonococcus is not longer than six days[6]. Therefore any form of pyretotherapy must produce a temperature higher than 40° C., which, in turn, should last several hours; or if the produced temperature is less than 40° C. but higher than 38° C., it should be kept in this range for a period not less than six days.

Of the forms of heat that have been and are used with varying degrees of success, the most common is hot water either in the urethra or in the opened infected joint[7]. The constant application of circulating hot water is impractical, nor will the tissues surrounding the infected area maintain uniformly the desired high temperature, when a constant current of blood of a lower temperature is irrigating the same region. A superficial hyperemia with increase of temperature of the lower part of the body may be obtained by use of the sitz-bath, but probably the rise of the temperature in the deep tissues is comparatively insignificant. It is claimed that body temperature as high as 43° C. may be obtained in baths in which the whole body is allowed to remain in very hot water[8]. This form of treatment would seem to be ideal, if a sufficiently large percentage of patients could stand this high temperature, and if those who could stand it remained in the water long enough. Unfortunately neither the one nor the other is possible.

Diathermy offers some hope especially in the complications of gonorrhea, for the temperature is raised not in the superficial but in the deep tissue layers. The unfavorable results with which we are so familiar are evidence that temperature sufficiently high cannot be maintained.

It is probable that the results claimed for various forms of "foreign protein", specific or non-specific vaccine, or live gonococci injections[9] are due solely to fever and to nothing else. In contrasts to many pathogenic organisms, the gonococcus is very sensitive to temperature changes, and fortunately more so than the human body itself. Therefore it would seem wise to center our attention on this point rather than upon therapy designed to produce "protein shock". The temperature following injections of vaccines made with killed bacteria is some-

*For record and address of author see "This Week's Issue," page 1058.

times higher than 39° C. and in rare instances higher than 40° C., but almost invariably the high level is retained for a very brief period, usually less than an hour, and even the lower maximum rises of temperature which may occur do not last more than four or five hours. As a rule a certain amount of benefit follows their use, probably because the gonococcus becomes attenuated by heat, and is then more readily attacked by the body's natural defensives, as well as the antiseptics, when they can be employed. The benefit, however, is not always marked nor permanent.

Spiethoff[10], Lentzmann[11], and Scherber[12] have tried malaria treatment in gonorrhea with quite satisfactory results. The temperature curves obtained from malaria and intravenous typhoid vaccine treatment resemble each other closely, the sharp rises and the quick remissions being identical in both. The malaria treatment offers the distinct disadvantage of infecting a patient with a disease the end results of which in so many cases is undesirable.

There prevails a popular belief in Greece, confirmed by the author's observations of several patients, that a subject with chronic gonorrhea is invariably cured if he survives an attack of typhoid fever. A similar belief does not exist, to the author's knowledge, concerning the endemic malaria which is more common and almost universal. It is interesting to note that the temperature curve of typhoid fever answers the aforementioned theoretical requirements which were obtained from the cultural characteristics of the gonococcus. The temperature during the second febrile period of typhoid fever, the so-called "fastigium", which lasts on the average for about ten days, is usually over 40° C. for the greatest part of the day, dropping to 39° C. for a very short period of time, during the morning remissions. It would seem that the gonococci which survive the high temperature are prevented from multiplying, and finally die of old age.

It is known that frequently abscesses of the epididymis lead to the complete disappearance of gonococci and clinical cure of the disease. The author has observed that this occurs in those patients whose body temperature rises above 40° C. and in those patients whose body temperature is lower than 40° C., but which persists for a period of a few days.

All these clinical observations, especially the type of fever accompanying the abscess of the epididymis, together with the above mentioned cultural characteristics of the gonococcus, suggested the production of a sterile or aseptic abscess as a means of pyretotherapy in the treatment of gonorrhea, because it was thought that an abscess is often accompanied by rise of temperature, and because it may be repeated in case the first abscess does not produce sufficient temperature elevation or duration.

It must be stated here that the aseptic abscess is used, not because of any "fixative" property which has been assigned to it by various authors who have employed it previously as a so-called "fixation abscess", but because of the fever which it causes. That temperature elevation was not the aim of those authors is clear from the fact that the "fixation abscess" was employed invariably in febrile diseases, chiefly bronchopneumonia, typhoid, and puerperal fever. Turpentine was selected as a material for the production of the abscess, because it has been tried previously in this capacity and found to be harmless.

Fochier[13] was the first to use the aseptic abscess in the treatment of generalized pyogenic infections. He tried quinine first, then silver nitrate, and then turpentine, and continued using turpentine exclusively. In all his experience no untoward effects were noted. Even those who doubted Fochier's results do not ascribe any danger to this form of treatment other than the great inconvenience and pain. Chantemesse and Marie[14], Fochier's critics, used it in eight cases of pneumonia without favorable therapeutic results, and state that animals receiving injections of 2.0 cc of turpentine died in an extreme state of emaciation, but those who received 1.0 cc survived although very emaciated. Lépine[15] in a case of pneumonia, when the patient was in extremis, induced four aseptic abscesses at one and the same time by injecting 1.0 cc of turpentine into each of the four limbs and the patient survived. For our purpose we need but a few drops, and if persons suffering from a more serious disease and more acutely ill experience nothing but pain, and if 1.0 cc does not kill a rabbit, a subject otherwise healthy should tolerate a few drops.

No specific value is attributed by the author to turpentine either as such or for a possible "foreign protein" effect, and it is employed solely for the purpose of elevating the body temperature, in contrast to the motive of the many authors who used turpentine in the treatment of gonorrhea. Their purpose was not to produce fever, because they tried to eliminate it, thinking of it always as the great disadvantage of the turpentine-injection therapy. In order to avoid fever, they always gave the injections intramuscularly and in increasing doses, and the turpentine was used in different vehicles and dilutions, so that pain and fever might be eliminated, in so far as it was possible.

The chief enthusiast of the so-called turpentine treatment, Klingmueller, in his first communication[16] thought that the turpentine had a specific action, but did not explain it, and although he saw complete cures with only one injection of 0.2 cc, he abstained from advising the use of it in complicated cases. In his next paper[17] he stated that the onset of the epididymitis and other complications appeared as quickly in some cases as the good results in others.

He offered then the following explanation for the action of turpentine:

1) Turpentine or its oxidation products circulating in the blood act chemically.
2) Turpentine or other similar substances neutralize the specific substances of the disease which attract the harmful organisms.
3) Antibodies or some kind of opsonins may be formed, as the reaction appears to resemble that of the specific vaccines.
4) Turpentine stimulates the formation of "inflammation antibodies" which are specific for the inflammation and suppuration, but not for the cause.

Other explanations were suggested by Klingmueller in a later paper[18], namely, that turpentine does not kill the gonococci but renders them unable to use their "tissue-harming action" (Gewebsschaedigende Wirkung") as long as the turpentine is in the circulation, and as soon as the turpentine disappears from the body, the gonococci resume their "tissue-destruction" and the formation of pus.

Tennenbaum[19], who claims excellent results in epididymitis, thinks that "it acts on the disease by exerting a stimulating effect on the general vitality of the system".

Many authors, mostly Germans, followed Klingmueller's ideas and technic, or tried modifications of their own to avoid the "undesirable reactions", the chief manifestation of which was the rise of temperature. Their results in gonorrhea as well as in skin diseases differ, and it is curious to note that those who claimed good results complained of the rise of temperature. Conversely, Friedrich[20] and Hellendal[21], who doubted the effectiveness of turpentine injections, noticed no fever in their experience. Sellei[22] claims good results but complains of the "great disadvantage of fever" and pain. Ruete[23], who used turpentine in trichophytia, had good results but fever. Karo[24] reports excellent results in different forms of gonorrhea both in the male and female, but in some cases he noted a fever up to 38.4° C. Isaeson[25], who obtained poor results in gonorrhea, as far as the discharge was concerned, but "excellent" in the complications, chiefly prostatitis (which subsided after the first injection without the necessity of massaging the gland) and epididymitis, noticed "strong reactions many times". Undoubtedly, fever accompanied these "strong reactions" and, as it will be seen later, the author's cases were greatly benefited as far as the complications were concerned, even when the temperature was not elevated sufficiently to kill the gonococci in the urethra.

The author has used the aseptic abscess in eleven male patients; only one injection has been given in each case. Neither multiple nor repeated abscesses were induced, for none of the patients could be hospitalized. Unfortunately for this reason the observations are incomplete, and with the exception of one case, the patients could not keep a good record of their condition especially as regards the temperature. In all cases the urethral smear taken immediately before injection was positive for intracellular gonococci.

Non-rectified turpentine was used in cases No. 1 to No. 6 and in case No. 11. In the latter the drug was obtained from a different source. Rectified turpentine was used in cases No. 7 to No. 10. The fore surface of the thigh was selected because it was thought to be the best adapted for the site of an abscess in adult male, non-hospitalized patients. The author believes that the abdominal surface is to be preferred in hospitalized patients, especially female. In gonorrheal arthritis the abscess should be induced near the affected joint, and if multiple abscesses are advisable, one above and another below the joint, for the reason that in addition to the general, there is a local elevation of temperature accompanying the abscess.

Fochier's technic[26] was followed, and his precautions not to inject the turpentine too near the aponeurosis to avoid "sloughing of the skin" were kept in mind, but only 0.2 to 0.5 cc were injected. When rectified turpentine was used, there followed extensive infiltration of the soft tissues, the swelling extending below the knee joint, and invariably no true abscess was formed but rather a phlegmonous type of process. The injection of non-rectified turpentine produced the typical aseptic abscess with much less infiltration. The fever appeared within a few hours to two days following the injection. When the fever subsided, the abscess was either incised or aspirated and a gummy, brownish, slimy material, smelling strongly of turpentine was obtained. Its volume varied from 30 to 70 cc. The pain, which was severe, and always accompanied the abscess, ceased immediately after the latter was opened.

It is quite evident from this limited experience that non-rectified turpentine is preferable, for the reason that fever and pain can be aborted at will, by draining the pus.

The case histories which follow, may be classified in the following manner:

I Simple urethritis with the "second glass" clear.
Cases: 1, 4, 5, 8, 10.
II Urethritis with the "second glass" cloudy and no other complications.
Case: 2.
III Urethritis with the "second glass" cloudy and prostatitis.
Cases: 6, 9.
IV Urethritis with the "second glass" cloudy, prostatitis and epididymitis.
Cases: 3, 7, 11.

Cases No. 1, 2, 4, 5, 6, 7, 10 were clinically completely cured; case No. 1 without the aid of any other form of treatment. Cases No. 2, 4, 5, 6, 7, were given the aseptic abscess treatment

combined with urethral injections, and to case No. 10 urethral injections, intravenous vaccine and intramuscular milk were given during the fever period of the abscess. In cases No. 8, 9, 11 the urethritis persisted; however, such complications which were present, as in cases No. 9 and No. 11 were clinically cured. In case No. 3 the outcome should be considered doubtful, as far as the urethritis was concerned, but the complications were clinically cured.

It is to be especially noted that all the complications disappeared without prostatic massage, or any other form of treatment for those who had epididymitis.

The excellent results thus gained in the complications are due, according to the author's belief, to the fact that the local temperature of the affected gland (prostate, epididymis) was increased both by the local gonococcal abscess and the high temperature of the body from the aseptic abscess.

CASE HISTORIES

Case 1. P. T., a man 32 years old having urethral discharge positive for gonococci, for four days. The second glass of his urine was not cloudy and there were no clinical complications. An aseptic abscess was induced with 0.3 cc of spirits of turpentine. A rise of temperature was noticed a few hours later, and the discharge ceased the next day. No other form of treatment was given and the patient remained free of any symptoms during two and one half years of observation.

Case 2. N. M., a man 28 years old, with a urethral discharge of three weeks' standing. He had been under treatment with a doctor since he noticed the discharge, but a week later, in spite of the treatment, he became worse. When seen by us he had a gonococcus-positive smear and a second glass cloudy. The prostate was found normal. An aseptic abscess was induced with 0.2 cc of spirits of turpentine. The next day the discharge became more profuse and urethral injections every second hour were advised. These were continued for two weeks with solutions of decreasing strength (protargol and argyrol were used), even though the discharge stopped on the second day after the beginning of the injections. The patient remained under observation for several weeks and was seen a year later, having remained free of symptoms.

Case 3. J. V., a man 34 years old. He had contracted gonorrhea 4 years previously and had been under treatment with different doctors. Although he never discontinued treatment the discharge never stopped, being at times more or less, but always present. He had had several attacks of epididymitis. When first seen by us, his profuse urethral discharge was positive for gonococci, the second glass cloudy, the prostate very large and tender, and the right cord and epididymis swollen and tender. None of these symptoms was ameliorated after ten days' routine treatment. An aseptic abscess was induced with 0.3 cc of spirits of turpentine. After twenty-four hours the patient began having pain and fever. On the third day he had his maximum discomfort and when seen by us at his home, his temperature was 41.2° C. and there was complete disappearance of the discharge. Two weeks later a mucinous discharge appeared which consisted of mucus with very few pus cells and numerous microörganisms, but no intracellular diplococci. This was influenced by urethral injections but always returned a few days after treatment was discontinued. Gonococci, however, were never demonstrated. Repeated smears after urethral injections of silver nitrate, which produced therapeutic urethritis with profuse discharge of pus, were always negative, as were those obtained after intercourse and excessive intake of alcohol. His business took him abroad, where he remained for two years, constantly under medical observation. He had smears examined at different laboratories. In two instances two laboratories reported a positive prostatic smear, which was doubted by his attending physician and was never confirmed by the same laboratories on several subsequent examinations. After returning to this country, a few months ago, he was again seen by us, but there was no discharge and the prostatic fluid was negative. He reports, however, that occasionally he sees the "morning drop", which is neither constant nor gives to the patient any other trouble than the impression that he is not cured.

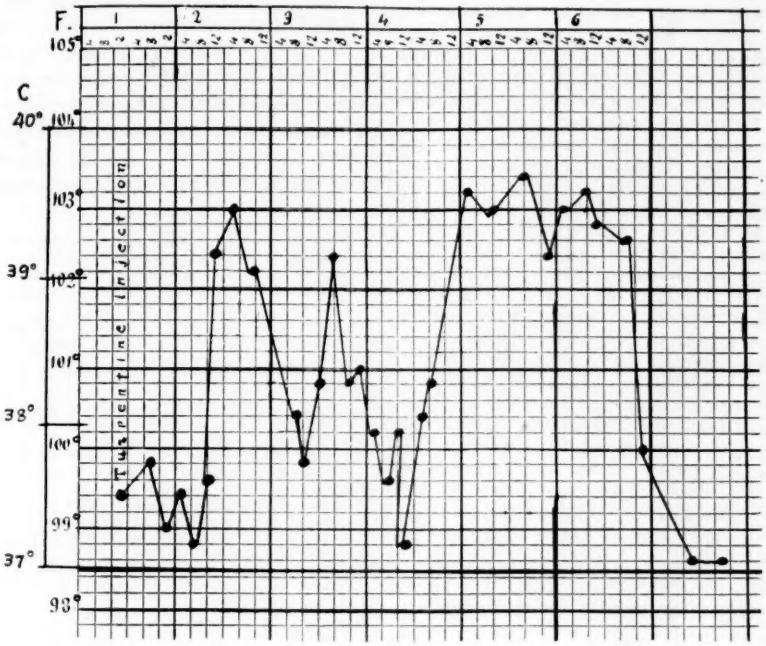
Case 4. N. P., a man 24 years old with acute urethritis for three days, a smear positive for gonococci and a second glass not cloudy. An aseptic abscess was induced with 0.2 cc of spirits of turpentine, and the patient was advised to inject himself every two hours, alternating with weak solutions of argyrol and protargol. This was discontinued ten days later. The discharge did not return, and the patient remained free of symptoms for a period of two years' observation.

Case 5. G. M., a man 30 years old with a urethral discharge present for a week. The smears were positive for gonococci and the second glass was not cloudy. After three weeks conservative treatment without amelioration an abscess was induced with 0.2 cc of spirits of turpentine. The presence of a slight discharge six days following the injection suggested local treatment, although the smear was negative. This was discontinued a week later and the patient remained under observation for two months without recurrence of any symptom.

Case 6. L. C., a man 40 years old with a urethral discharge present for about a month, during which period he tried self-medication without benefit. When seen, his profuse discharge was positive for gonococci, the right lobe of the prostate inflamed and abscessed and the second glass was cloudy. He had a temperature of 37.3° C. After a week of routine treatment without amelioration, an aseptic abscess was induced with 0.3 cc of spirts of turpentine. The prostatic pain disappeared the next day and also the discharge. Urethral injections as in case No. 4 were advised which were discontinued a week later. The patient remained free of symptoms during a period of 4 months' observation.

Case 7. G. K., a man 35 years old with urethral discharge present for 15 days. He was treated by himself and his friends, and when seen by us he had a positive smear for gonococci, the second glass was cloudy and he had an abscess of the left lobe of the prostate. Three days later he discontinued treatment, only to return a week later with considerable pain and the prostatic abscess now in both lobes. Two days later and for three days thereafter he had pain in the right inguinal region and the right testis due to the inflammation of the right cord, seminal vesicle and epididymis. The temperature was 37.5° C. After an aseptic abscess was produced with the injection of 0.2 cc of rectified turpentine, the patient went home and was not seen until 6 days later, but he kept a good record of his temperature, the diagram of which is appended. When seen, all of his symptoms had disappeared. There was still a moderate swelling of the epididymis which subsided completely in the next few days. There was no discharge present but the first small portion

of his urine contained a few threads. After centrifucation a smear of these revealed a few pus cells with only occasional intracellular diplococci. From the first urethral injection the threads disappeared,



CASE 7.

and to test the potency of the gonococci that survived this high temperature, the treatment was discontinued three days later. The patient has remained and is now entirely free of any symptoms after a lapse of five months.

CASE 8. G. D., a man 37 years old with urethral discharge for four days. Examination showed a positive smear for gonococci, the second glass not cloudy and no prostatitis. An aseptic abscess was made with an injection of 0.5 cc of rectified turpentine. The patient's address was not given correctly and he failed to report until 13 days later, still having pains and walking with difficulty. A slight discharge was present, which proved positive for gonococci. Two weeks' routine treatment failed to render the discharge negative, and the patient discontinued treatment apparently dissatisfied and did not report again.

CASE 9. T. C., a man 40 years old. He had his first gonorrheal infection 7 years ago, incompletely treated at the time. During these years he had many attacks or "reinfections" with a complication of prostatitis each time, but gave no history of epididymitis. For a year he had no discharge, although he had sexual intercourse regularly. The first glass always contained some threads and was slightly cloudy. Eight days ago he had promiscuous intercourse and four days later he noticed a profuse discharge. Examination revealed a positive smear for gonococci, the second glass cloudy, and swelling of the prostate, but the gland was not tender enough to suggest recent infiltration. After a routine treatment of 5 days, an aseptic abscess was induced with an injection of 0.5 cc of rectified turpentine. The third day the temperature reached 39° C., remaining at this point for about 10 hours, and completely disappearing the seventh day. Local treatment was advised and started the fourth day, but was not continued faithfully owing to the patient's extreme pain in moving around. In this patient the injection produced an extensive infiltration of the soft tissues around the knee, the outer surface of the skin of the thigh was red and very sensitive, and only after two weeks was the patient able to make a limited use of his leg. It produced, however, no sloughing, as it was feared, but gradually subsided completely. Following treatment, the discharge disappeared completely only to reappear "positive" two weeks later. The patient was subsequently treated routinely.

CASE 10. J. K., a man 29 years old, contracted gonorrhea four years ago and tried to treat himself for about two and a half years. Finally he consulted a doctor and was pronounced well, six months later. He remained free of symptoms until four days ago, when he noticed the usual symptoms of acute gonorrheal infection, having had promiscuous intercourse 4 days previously. The examination showed a positive smear with the second glass not cloudy. An aseptic abscess was made with an injection of 0.2 cc of rectified turpentine and the patient was advised to inject his urethra with solution of protargol and argyrol alternatingly. The temperature did not rise over 38° C. and there was no true abscess, but considerable swelling of the leg. The pain was very moderate, and the patient experienced but little discomfort. While the temperature was still at 38° C. an intravenous injection of 0.1 cc of bacterial vaccine (Sherman's Gonococcus mixed No. 49) was given, following which the temperature rose to 39° C. two hours later, and two hours still later another injection of 3.0 cc of fresh milk was given intramuscularly. The patient then experienced considerable discomfort and his temperature rose to 40.5° C. He discontinued the urethral injection and left his bed the sixth day. No other form of treatment was given and the patient is free of any symptoms four and a half months since, having had sexual intercourse and consumed an excessive amount of alcohol many times.

CASE 11. T. B., a man 36 years of age, had his "first" gonorrhea about ten years ago and up to two years ago he was still under treatment with different doctors. The only complication he ever ex-

perienced was repeated prostatitis. For the last two years he had had no discharge, but there were always some threads present in the urine and pus in the prostatic fluid, the repeated examination of which was always negative. When seen by us he had a profuse urethral discharge which was positive for gonococci, the second glass cloudy, a large tender prostate, of the size of a small orange, both seminal vesicles infiltrated, the right cord and epididymis swollen and very sensitive and a temperature of 37.5° C. Urination was very difficult and painful. The patient denied any recent sexual intercourse. Conservative treatment for ten days failed to improve his condition. An injection of 0.3 cc of spirits of turpentine for the purpose of creating an aseptic abscess was given, and four hours later the patient's temperature rose to 38° C., after which time his symptoms began to subside, to disappear completely the next day, when the temperature rose to 39.5° C. This temperature lasted for about ten hours, then dropped gradually to 38° C. and remained around that mark for almost three days. After the sixth day the patient had no fever and no symptoms from his gonorrhea; the discharge, however, returned "positive" ten days after the injection. He was placed then under routine treatment, and up to the time this paper was written, seven weeks since, there has been no recurrence of any complications.

For the present we may say that in recent acute, non-complicated urethritis local conservative treatment is to be preferred to procedures that give general reactions (such as the aseptic abscess) and incapacitate the patient for some time. But in complications the aseptic abscess offers an excellent means for shortening the period of incapacity and, at the same time, beneficially influencing the outcome of the whole infection.

Decisive conclusions, of course, cannot be drawn from such a limited number of cases. The failures reported might have been avoided by the production of subsequent abscesses; this was not done in any of this series of patients, because none could be hospitalized.

The aseptic abscess may be employed in connection with the present accepted forms of treatment, and case No. 10 indicates how readily it can be combined with other fever producing methods (vaccine, milk) to the benefit of the patient.

The type of fever which accompanies the aseptic abscess suggests that pyretotherapy with the aseptic abscess may be employed in other diseases where temperature rises of some duration are desirable, such as syphilis and dermatoses.

SUMMARY

Pyretotherapy by means of aseptic abscess produced with turpentine was tried in eleven cases of gonorrhea in the male, six of which presented complications. Apparently complete cures were observed to occur in seven cases dating from one day to one week after the injection. There was a recurrence of the urethritis in three cases. In one case the result was considered doubtful. Such complications which were present were clinically cured.

BIBLIOGRAPHY

1 Cecil, Russel L.: Text-book of Medicine, page 123, Philadelphia, W. B. Saunders Co., 1927.
2 Hudelo, L.: In "Nouveau Traité de Médicine," by Roger, Widal et Toussier, Fascicule I, 2ème Edit., page 489, Paris, Masson & Cie, 1926.
3 Hewlett, R. Tanner: A Manual of Bacteriology, page 227, London, J. & A. Churchill, 1926.
4 Zinsser. Hans, and Tyzzer, E. E.: A Text-book of Bacteriology, 6 Edit., page 462, New York, D. Appleton & Co., 1927.
5 Bruhns, C.: In Ricke's Lehrbuch der Haut- und Geschlechtskrankheiten, Siebente Auflage, page 578, Jena, Gustav Fischer, 1923.
6 Savas, Constantine: A Manual of Bacteriology, 2nd Edit., page 312, Athens, 1914, in Greek.
7 Willard, D. P.: J. A. M. A., 89:2177, Dec. 24, 1927.
8 Weiss, O.: Quoted by Bruhns, in Loc. Cit., page 603.
9 Loeser, A.: A Cure of Chronic Gonorrhea in Female by Means of Single Subcutaneous Injections of Live Gonococci, Amer. J. of Ob. and Gyn., 14:329, Sept., 1927.
10 Spiethoff, B.: Die Behandlung der Gonorrhoe mit Malaria und Saprovitan, Muenchen. Med. Wochenschrift, 23:959, June 10, 1927.
11 Lentzmann, R.: Ueber Behandlung der Cronischen Gonorrhoe durch Malariauebertragung, Deut. Med. Woch., 38:1608, Sept. 17, 1927.
12 Scherber, G.: Die Malariabehandlung der Gonorrhoe, Wien. klin. Woch., 44:1383, Nov. 3, 1927.
13 Fochier, A.: Therapeutique des Infection Pyogènes Generalisées, Lyon Medical, 67:555, 1891.
14 Chantemesse, et Marie, R.: Sur l'action des Injection Sous-cutanées d'essence de Térébinthine, Soc. Méd. des Hôpit., 9:376, May 27, 1892.
15 Lépine, R.: Sur une Nouvelle Méthode de Traitement de la Pneumonie au Imminence de Suppuration, Le Semaine Médic., 12:77, 1892.
16 Klingmueller, Victor: Ueber Behandlung von Entzuendungen und Eiterungen durch Terpentineinspritzungen, Deut. med. Wochenschr., 43:1294, Octob. 11, 1917.
17 Klingmueller, Victor: Ueber die Wirkung von Terpentineinspritzungen auf Eiterungen und Entzuendungen, Muench. med. Wochen., 65:896, Aug. 13, 1918.
18 Klingmueller, Victor: Zur Behandlung der Haut- und Geschlechtskrankheiten mit Einfuerung unspezifische Stoffe, Archiv. fuer Dermatologie und Syph., 138:169, Apr. 15, 1922.
19 Tennenbaum, Joseph: Turpentine by Injection in Dermatology and Urology, Medical Record, 101:54, Januar. 14, 1922.
20 Friedrich, Hans: Terpentinbehandlung gynaekologischen Entzuendungen, Zentralbl. fuer Gynaek., 45:353, March 12, 1921.
21 Hellendal, Hugo: Zur Behandlung entzuendlicher Adnexerkrankungen mit Terpentineinspritzungen, Zentralbl. f. Gyn., 45:1864, Dec. 31, 1921.
22 Sellei, Josef: Terpentinoelinjektionen bei einigen Hautkrankheiten, Deut. med. Wochen., 44:1028, Sept. 12, 1918.
23 Ruete: Zur Frage der Terpentinbehandlung, Dermatolog. Zeitschrift, 28:28, July, 1919.
24 Karo, Wilhelm: Weitere Erfarungen mit den Eukupin-Terpentininjektionen bei urologischen Krankheiten, Deut. med. Wochen., 45:266, March 6, 1919.
25 Isacson, L.: Die Erfolge der Terpentinbehandlung der Haut- und Geschlechtskrankheiten, Mediz. Klinik, 17:966, Aug. 7, 1921.
26 Fochier, A.: Loc. Cit.

A PHYSIOLOGICAL THEORY OF READING DISABILITY AND STUTTERING IN CHILDREN*

BY SAMUEL T. ORTON, M.D.†

IN 1925 there was published by the writer a preliminary report of a study of a group of children who were retarded in reading and who seemed to him to show a complex of symptoms which differentiated them from normal readers[1]. At one extreme of this group was a case of such severity that it would be universally characterized as congenital word blindness, while the remainder seemed to form a graded series

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†For record and address of author see "This Week's Issue," page 1058.

extending from that to the normal. In the past there has been a tendency to look upon the more severe cases as pathological in nature and the less marked ones as merely cases of slow acquisition of reading, but there has been no criterion by which these two groups could be separated except the opinion of the examiner. In my report it was pointed out that there were certain errors which seemed to characterize the reading attempts of these children and which suggest a physiological rather than pathological basis and a tentative explanation was offered on the basis of confusion in cerebral dominance. Following that study an extension of these observations was made by a grant from the Division of Studies of the Rockefeller Foundation. This work was initiated in January, 1926, under my direction at the Iowa State Psychopathic Hospital, and continued until October, 1927. For this further study 175 children were chosen who showed a selective retardation in reading below both mental age and school grade placement. By this method of selection there was obtained a group of retarded readers without regard to the character of their reading performance and to these children was given an examination designed to discover the frequency of certain types of errors in their attempts at reading. As a control series the same examination was given to 120 children who were reading with the facility expected for their mental age and grade placement. The results of this work are soon to be published in detail[2] but I may anticipate their appearance by the statement that these studies bear out strikingly my earlier contention that reading disability forms a fairly clear-cut clinical entity which can be diagnosed by the frequence of certain types of errors and that our series of tests will also serve to grade cases according to the severity of their handicap.

The work of retarded readers is characterized by a tendency to confuse letters which are alike in form but different in orientation, as lower case *b* and *d* and *p* and *q*, and by a tendency toward sinistrad reading in which there is either misreading or complete bepuzzlement when confronted with short pallindromes like *was* and *saw, not* and *ton, on* and *no,* or in which paired letters or syllables or parts of words are read backward as when *calm* is read as *clam, gray* as *gary, tarnish* as *tarshin, tomorrow* as *tworrom,* etc. They further show a markedly greater facility in reading from the mirror than do normal children and often a much greater ability in mirror writing as well. To demarcate this larger group, which includes a much wider range than the earlier category of word blindness, I have suggested the name "strephosymbolia" (twisted symbols) as a term descriptive of the objective symptoms.

Many other errors are to be found more frequently in the work of the retarded group than in the normals. Here may be mentioned failure to link the proper consonant or vowel sound with its appropriate visual symbol, errors caused by omission or addition of sounds, repetition of parts of a sentence already read, etc., but these I consider to be only a by-product of the failure of proper association due to the confusional element injected by reversals or by insecurity concerning direction of reading. As supportive evidence for the etiological relations of this factor of directional confusion, I may add that our retraining experiments indicate clearly that when this tendency is lessened by special drills aimed at consistent direction, there is not only a marked improvement in ability to read but also a marked change in the error picture presented so that both range and type of errors become more like those of the normal readers.

In my first report I called attention to the rather high incidence of speech disturbances in my series of reading cases and since the concept of confusion in cerebral dominance seemed to offer a point of attack on stuttering also, we have carried out some experimental studies in that field as well.

Stuttering, like strephosymbolia, occurs in graded steps from normal to extreme. The emotional element has received much attention in stuttering and has long been popular as an explanation of its occurrence. It is, of course, true that stuttering is not only more frequent but more severe in embarrassing situations and that it rarely occurs in singing or in repetition of material learned by rote. This immediately suggests for us that the difference here is related to the plane of the speech effort rather than to the emotional influence of the environment or the actual emotional content of the speech. This brings into relief the propositional element of speech and with one exception this seems to be the plane at which stuttering is most severe and most frequent, and it is often of course in embarrassing and strange situations that the propositional effort is most stressed. The exception mentioned is oral reading; some stutterers read aloud with relative fluency, but we also have observations in several cases of our series in whom stuttering is much worse when reading aloud than in any other form of speech. A nice formulation of the influence of the propositional element in a somewhat comparable difficulty was given me by a highly intelligent case of writing disability. This was a young man for whom writing in the dextrad direction was very difficult—indeed his product was often quite illegible to himself as well as to others—yet who wrote letters home which his family could read. On question he explained this by saying that when he didn't have to *think* hard he could write better but when he had to think and write at the same time, as when answering examination questions, he couldn't write so that he could read it himself.

Our physiological studies in stutterers are not all as yet in print but part of this series of reports have appeared[3 4 5] and others are to

be published soon. In summary we may say that the stuttering act is characterized by a striking failure of orderly integration of the various reflex groups which co-ördinate in the production of speech. Thus we have records in which the direction of motion of the chest and abdomen are synchronously opposed, the chest inhaling while the abdomen exhales and vice versa, thus counteracting each other so that no breath stream is passing the larynx. Again the larynx, which normally makes many up and down excursions in vocalization independently of the expiratory movements, is seen in some of our records to move in time with the abdomen or with the chest[4]. We have also found evidence of both tonic and clonic spasms in the muscles of the vocal mechanism during stuttering. The tonic spasms show themselves in both kymographic records of the movements of the chest, abdomen and larynx and also in the fixed tones which can be shown by plotting photographic records of the speech vibrations[5]. The clonic spasms are perhaps best shown by the occurrence of a vibrato in the stutterer's speech[5]. The vibrato is a rapid fluctuation within a narrow range of pitch which is found in singing, in intoning and probably also in strongly emotionally colored speech but is not found in normal fluent propositional speech.

The relation between stuttering and the enforced training of a left-handed child to use the right hand has been frequently recorded in the literature and naturally our attention turned to the relationship of handedness to stuttering. Many tests have been advanced for the detection of the facile hand, but we soon became convinced that none of the ordinary tests were dependable because of the effects of training and imitation. Many mothers shift children who show a preference for the left hand at a very early age. In one of our cases a little girl started to talk at about the usual period and at the same time gave evidence of selective choice of her left hand. The mother, with that curious reaction which appears to hold lefthandedness as abnormal, insisted on the child's use of her right hand with her spoon, etc. Almost immediately the child stopped all efforts of speech and did not begin again for over a year and when she did begin, she stuttered badly. In another case which I have seen quite recently the stuttering was associated with a high degree of strephosymbolia. This was a twelve-year-old boy who started out in infancy to use his left hand and was shifted by his mother. His speech showed no defect until he entered school, where again his left preference was manifest and pressure was necessary to make him learn to use his right hand in writing. Coincident with this new pressure his stuttering began. Today if a pencil is offered to him, he almost invariably grasps it with his left hand and then transfers it to his right. His father is left-handed in everything except writing and the boy carries out most of his motor acts with the left hand. In golf, however, which he has learned from his mother, who is right-handed, he uses his clubs as a right-hander does. In golf this boy shows the effect of imitation, in writing that of enforced training. An exceedingly instructive description of the influence of imitation was given me recently by a man who had been a pole-vaulter during his college course. In discussing handedness he told me that, as far as he knew, he was naturally right-handed in everything except pole-vaulting and this he did from the left. He explained this by recounting his first contact with this sport when as a high school boy he saw a single vaulter give a demonstration. This athlete was left-handed and from then until he entered college, the boy's imagination turned frequently toward vaulting; as he put it, "I could feel myself running down the field carrying the pole as I had seen it carried, and thrusting it into the ground for the lift." When he finally did appear on the athletic field this preference was so fixed that the coaches despaired of making a right-handed vaulter out of him and let him go ahead as he was inclined. Generally speaking the only motor function which is held to be of real significance as to handedness is that of writing and indeed many hospital records in aphasias and other of the alpha-privative brain diseases (alexia, agraphia, apraxia, etc.) require no further evidence of handedness than that of the writing hand. The practice is so widespread among teachers today, however, of training every child to use the right hand in writing, if it can be done by coercion or wheedling, that very little dependence can be placed on this evidence alone. Much of the aphasia literature must be questioned for this reason and we feel that the ordinary motor tests were far from satisfactory for our purpose.

Golla[6] has reported finding differences in the time of incidence in the action currents of the two forearms on simultaneous motion which, in his case, were related to handedness. So far as I am aware, neither Golla nor any other observer has followed up this work, but it appealed to us well worth a trial for our purposes. The full results of this work will appear later[7], but in brief we have found that in clearly right-handed normal speakers, the number of times the action currents in the right arm appear first far exceeds the number of times they appear simultaneously or in the left first. In seventeen stutterers, all of whom would be adjudged right-handed by the usual tests, the records are decidedly different. In this group the currents take precedence on the left in much greater number of trials than on the right and the simultaneous records also outnumber the right markedly. Whether or not these action current patterns give a real indication of the native handedness of an individual remains to be controlled by much wider investigation, but it can at least be stated that our series of "right-handed" stutterers gave a very

different action current pattern than did our right-handed normal speakers. A number of other tests were used, but these need not be detailed here.

Before presenting our current envisagement of the relationship of cerebral dominance to certain of the symptoms reviewed above, it may be well to review briefly certain of our knowledge of cerebral localization and the results of lesions in certain fields.

The central nervous system is divided into two quite symmetrical halves of approximate equality in size. From the gross standpoint, size probably is of very doubtful importance. Variations in weight due to differences in vessels or in amounts of myelin or neuroglia might far out-weigh differences in cortical elements and thus mask really significant differences. In general, however, the gross weight of the two hemispheres is the same. Some years ago, at the Worcester State Hospital, I recorded individually the weights of the two hemispheres in a considerable series of autopsies. On reviewing such records of about 80 brains recently, I found that in the majority of these cases the protocols made record of gross lesions which nullified them for our present purpose, but there were 27 brains which fell in Southard's "normal looking" group. In these the left hemisphere was somewhat heavier in nine cases, the right in eight and their weight was equal in ten. From the microscopic standpoint we can say with considerable assurance that the two sides of the spinal cord are very exactly alike. Fig. 1 is from a projection drawing of a section of the spinal cord chosen from among a set of routine teaching slides. No attempt has been made in this to reproduce exact outlines of cells but their number and position has been carefully followed and the figure speaks for itself. In the brain our information is less exact, but we may safely say that no readily observable differences between the hemispheres occur in lamination, in numbers, in size or in spacing of brain cells. There are, however, striking differences when we compare the functional activity and relations of the two hemispheres field by field.

The motor cortices are strictly unilateral in their function and they are strictly independent. No further evidence need be cited for this than that of the unilateral paralysis which follows lesions of the contra-lateral precentral or capsular regions. They are also antitropic, i. e. each is arranged in the mirror pattern of its mate and I think we can consider it safe to assume that any irradiation pattern of one hemisphere will give a motor response which will be the exact mirror counterpart or antitrope of that resulting from an exactly similar irradiation pattern in the other hemisphere. This relationship is indicated in Fig. 2.

A similar antitropic unilateral independence is to be seen in one sensory cortical field. This is the postcentral zone, which is intimately related to the motor area and which probably serves for the registration of the epicritic fraction of the exteroceptive and proprioceptive stimuli brought in through the spinal cord. As in the motor cortex, where separate control of the two paired halves of the body would seem to require separate functional relations, so here in the postcentral cortex the physiological demands would seem to necessitate functional divorce of the two hemispheres. In the case of these spinal receptors it is important for proper responses for the brain to be informed not only that a thumb has been burned but which thumb it is.

In the case of one of the projicient exteroceptors (i. e., those sensory mechanisms which are influenced by stimuli arising at a distance from the body,—smell, vision and audition,) there is very little accurate information. This is the sense of smell and the paucity of knowledge here rests in part on the relatively small use that is made of this sense and in part on a lack of interest on the part of recording observers. Of vision and audition we have better information, however. It is obvious that in these two sensations, in order to insure adapted responses to environmental changes, a sensory stimulus arising in one eye must either fuse its charge with that arising in the other eye or enter into rivalry for the control of the final common paths. In certain of the lower animals—notably the achiasmic—rivalry probably occurs, but Sherrington's[8] careful study of retinal flicker has

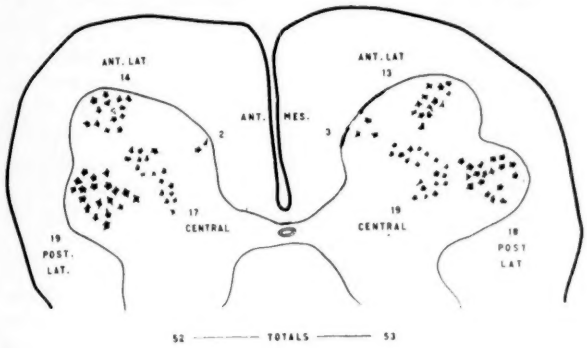

FIG. 1. Projection drawing of spinal cord to show antitropic symmetry.

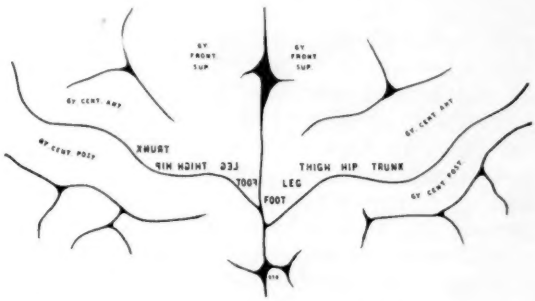

FIG. 2. Antitropic arrangement of functional centers in motor area.

established fusion as the pattern of the human visual cortex and this is probably also true of audition. That the two hemispheres act as one by thus fusing the effect of bilateral irradiation to produce a single conscious impression seems also well supported by the fact that at the lower levels of sensory elaboration a bilateral lesion is necessary for loss of function. A unilateral lesion causes no demonstrable loss in central vision for example and one side of the brain is apparently no more important than the other in this respect. In audition, likewise, apparently a bilateral lesion of the transverse temporal gyri of Heschel is necessary to produce cortical deafness.

We must, however, bear in mind that there are several functional levels of sensory elaboration in both vision and audition and, as we shall see, these inter-hemispheric relations are not alike at all levels. The first cortical platform of vision and audition is the first point of each system at which activity is associated with consciousness. If the arrival platform of both hemispheres (which we have reason to believe is restricted to the calcarine zone or area striata in vision and to the transverse temporal gyri in audition) be destroyed, the results are cortical blindness and cortical deafness, respectively, in which no conscious response to light or sound remains. If, however, these areas be intact but extensive unilateral lesions occur in the higher platforms, the result is mind blindness or mind deafness in which the individual can see or hear things sufficiently to guide coarse motor acts (e. g., avoid collisions) but in which things seen or heard have no meaning. The classical description of Munks' dogs give an excellent picture of this condition in vision. I think that we may assume that this arrival platform or first level of functional elaboration in vision, aside from acting as a very exact guide to motor responses to current sensations yields in consciousness only that fraction of the visual function which serves to make us aware of the external origin of a sensory impression as contrasted to a mnemonic recall. In psychological terms, it furnishes the perceptive fraction of sensation but not the apperceptive or associative. For these reasons I have suggested the name "visuo-perceptive" for the calcarine field[1].

When both the arrival platforms and the next adjacent cortical fields are intact but the third level of elaboration is lost by destruction still higher in the cortical pyramid, we encounter the conditions known as "word blindness" and "word deafness," in which vision and audition in the ordinary sense are intact and in which the use of objects and source of sounds can be interpreted but where the printed or spoken word has lost its meaning. Such a patient can recognize objects by vision and put them to their proper use but cannot read their name from print (alexia) and usually cannot call them by name (visual aphasia) or, in the auditory field, he can recognize a voice from the bark of a dog but cannot understand the spoken word.

These losses are exclusively at the third or symbolic level and when they occur they bring into relief the functions which are the additive result of activity at the first and second levels. As we have seen, the arrival platform probably furnishes to consciousness only the perceptive fraction of sensation, but when the second level is also intact there is added to this the recognition of meaning of objects seen but not that of symbols. We have reasons to believe that this second functional addition takes place in the large field of common occipital type of cortex encircling the area striata and for this I have suggested (loc. cit.) the use of the name "visuo-recognitive." It is to be emphasized here, however, that losses do not occur in either the first or second levels of elaboration of the visual or auditory sensory material unless the lesions be bilateral. Not only do the corresponding areas of the two hemispheres at these levels seem to work in unison to produce a single conscious impression, but apparently either is adequate for this result, as is shown by the fact that unilateral lesions do not destroy the function here and there is no evidence to suggest that either hemisphere is more important than the other. At the third or symbolic level, and here we may include both the sensory input (understanding the spoken word and reading the written word) and its motor congener (speech and writing), the situation is quite different. Here we find that a unilateral lesion is sufficient to destroy the function and moreover that the particular hemisphere plays a deciding part in the result. A destructive lesion in the so-called "zone of language" which corresponds closely with this symbolic level is only of importance in case it occurs in the dominant hemisphere and an exactly symmetrical lesion of the opposite or nondominant hemisphere does not result in any observable clinical symptoms. Up to this point our outline has followed the pretty generally accepted views of cerebral function. Although there are many minor differences of opinion in this field, especially as it bears on exact functional localizations and on the predestination of certain cortical structure for certain functions, yet I think the general story as presented would bear the endorsement of the greater number of students of human cerebral localization. Fig. 3 is a brain map giving in diagrammatic form the major areas here discussed. This is not intended to represent exact demarcations of these cortical fields. Indeed, except in the case of the calcarine or visual arrival platform, the transverse temporal field or auditory arrival platform and the precentral or motor area, no abrupt changes of cortex type are demonstrable. The chart does, however, give the general regional distribution and extent of the characteristic cortices. The legend shows in the fourth column the inter-

hemispheric relations which are of so much interest to us in this discussion.

As has been indicated above, however, there is no such striking difference in the structural development of the two hemispheres as we have seen to exist in their functional relations. In general the association areas of the non-dominant hemispheres, resting under cover of their title of "silent areas," have received very little consideration. If, however, we are to accept the tenets of neurobiotaxis, which hold that the growth and development of nerve cells is directly related to their irradiation by nerve currents, we must infer that the silent areas of the non-dominant hemisphere have received an irradiation approximately equal to that reaching the dominant in order to account for their approximately equal growth. Granting this, I think we may safely assume that such an irradiation will leave behind it a record or engram in the non-dominant hemisphere as well as in the dominant. The fact that losses in the language function (verbal understanding, reading, writing and speech) follow only when the dominant hemisphere is attacked, however, leads us to believe that only that pair of engrams are used in these functions which are recorded in the dominant side. Their counterpart must therefore be considered to be inactive in these processes, i. e., there is elision of one group at this functional level.

There is, however, for some cortical functions strict antitropism (i. e. right and left pairing) and it is only in those areas where fusion seems to occur (first two elaborative levels of the projicient extero-ceptors) where such apposition is not apparent in function as well as in structure and many of our data in cases of strephosymbolia offer evidence that this antitropism operates at the symbolic level of the visual field. Here I may quote again the cardinal points which characterize the performance in cases of reading disability;—confusion in orientation, reversal of sequence, mirror reading and mirror writing.

In skeleton, then, my theory of the obstacle to the acquisition of reading in children of normal intelligence which results in the varying grades of reading disability is a failure to establish the physiological habit of working exclusively from the engrams of one hemisphere. As a result there is incomplete elision of one set of antitropic engrams and there results confusion as to direction of reading which serves as an impediment to facile associative linkage with the auditory engrams, which, during the learning years at least, carry the meaning.

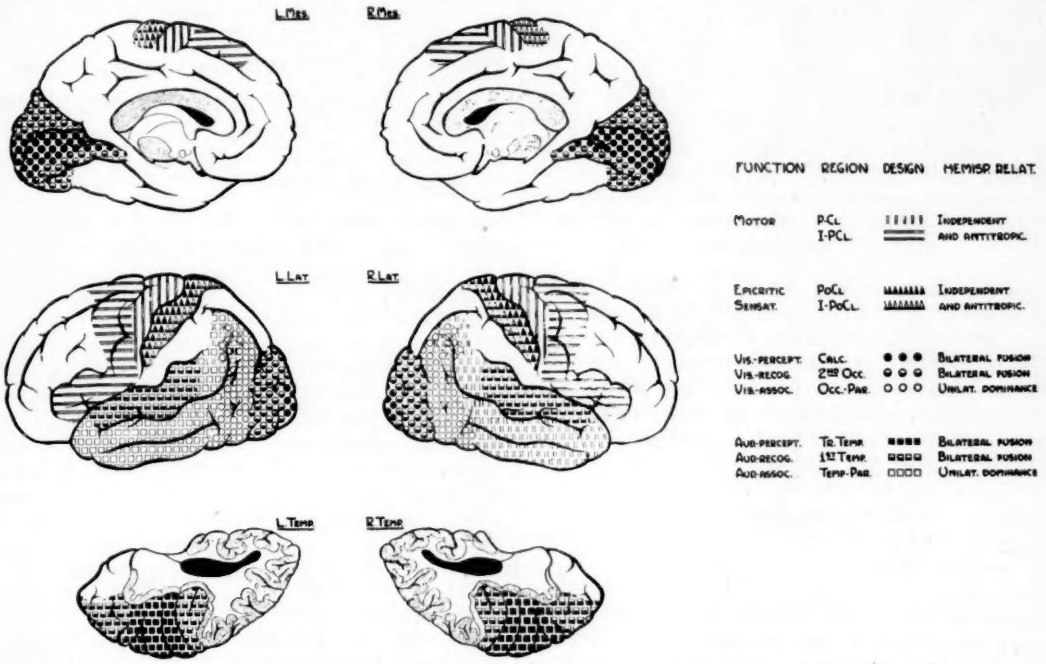

FIG. 3. Diagrammatic map of brain showing approximate extent and distribution of the cortical fields under discussion.

In stuttering the details are not quite so well elaborated, but there are several facts of suggestive interest here. We can demonstrate in stutterers a striking dysintegration of the reflex units which should operate in harmony in speech. While certain of these coördinations might superficially be likened to the results of cerebellar dysfunction, we do not encounter true stuttering as a result of acquired cerebellar lesions and the observed facts of the aphasias lead us to believe that the extensive and complicated integrations of speech are a function of the cortex and that sensory engrams of both visual and auditory implantation form an important pattern storage for the control of speech. Confusion in choice of antitropic engrams here also might result in failure of accurate synthesis of the reflex pat-

terns which enter the speech act. The connection here is not so direct, but the frequent association of change of handedness, especially in writing, with stuttering is suggestive, as are our observations of stuttering during oral reading, our records of action current patterns and the results of some of our experiments in treatment of stutterers.

Whether or not the theoretical outline for the two conditions of reading disability and stuttering here presented will stand the test of further study and more intimate knowledge of brain function and brain structure, we can at least say that this physiological concept offers a much more hopeful prognosis than that of the agenetic focal brain condition which has been its chief precursor as a theory of the etiology of word-blindness or than the most equally intangible emotional variant which has held sway in stuttering. Our new envisagement also has suggested some distinctive lines of experimental attack on retraining which we have already found highly effective in overcoming the reading impediment and very promising in stuttering.

REFERENCES

1 Orton, S. T.: "Wordblindness in School Children." Arch. Neurol. and Psychiat., 14, Nov., 1925.
2 Monroe, Marion: To appear later.
3 Orton, S. T.: Studies in Stuttering, Introduction. Arch. Neurol. and Psychiat., 18, 1927.
4 Travis, L. E.: Studies in Stuttering—I. Arch. Neurol. and Psychiat., 18, 1927.
5 Travis, L. E.: Studies in Stuttering—II. Arch. Neurol. and Psychiat., 18, Dec., 1927.
6 Golla, F. L.: The Objective Study of the Neuroses. The Lancet, 1921, II, 115.
7 Orton, S. T., and Travis, L. E.: To appear in Arch. of Neurol. and Psychiat.
8 Sherrington: Integrative Action of the Nervous System. Chas. Scribners Sons, 1906.

A STUDY OF ENDEMIC PELLAGRA IN CERTAIN SOUTHERN STATES

For more than twenty years the Public Health Service has been conducting studies of pellagra. As a result of these investigations it has been shown by Dr. Joseph Goldberger and his associates of the Public Health Service, that pellagra is a disease of dietary deficiency. Methods of prevention and cure of this disease have also been pointed out.

A recent publication issued by the Public Health Service (Hygiene Laboratory Bulletin No. 153) contains some very interesting data collected in connection with a study of endemic pellagra in some cotton-mill villages of South Carolina.

As a part of the field investigations of pellagra conducted by the Public Health Service there was begun in the spring of 1916 a study of the relation of certain social, hygienic, sanitary, and economic factors to pellagra incidence in some representative South Carolina textile-mill communities, so-called cotton-mill villages, in which the disease was believed to be endemic. On a varying scale, but without interruption, this study was continued until the fall of 1921; that is, during a period of about five and a half years.

The results of the first year's study have already been published. In the present communication there is recorded certain of the results of that phase of the subsequent study concerned with the incidence of the disease and the relation of this incidence to certain social, climatic, sanitary, economic, and dietary factors.

During 1917 in an aggregate population of 22,653 individuals, 1,147 cases of pellagra (an incidence rate of 50.6 per 1,000) were observed. Of the 4,104 households among which that population was distributed. 18.5 per cent. had at least one member affected by the disease in that year.

Pellagra (in an endemic locality) is very much (two to six times) more prevalent than the experience of the physicians of the locality would seem to indicate.

The fatality rate of the endemic disease, when definitely marked cases of all grades of severity are considered, would appear not to exceed 3 per cent.

Striking pecularities of age and sex distribution of the disease were observed.

The observations of age incidence appear to indicate, what seems not to have been recognized heretofore, that endemic pellagra is preponderatingly a disease of children of from 2 to 15 years of age.

Explanations of the peculiarities of age and of sex incidence are suggested.

The single woman, as compared with the married, widowed, or divorced, is relatively exempt from the disease. In the population group under consideration, the single woman is usually a wage earner, which may place her in a somewhat more advantageous position with respect to diet than her married or widowed sister.

The incidence of the disease was found to be markedly seasonal; 80 to 90 per cent. of all cases had their "onset" within the period April to July, inclusive. One explanation suggested, in view of the proved dietary relation of the disease, is the variation in diet brought about by the seasonal modification of the food supply.

The seasonal incidence of cases distinguished by their occurrence singly or otherwise in a household, and as initial and recurrent attacks, was studied.

The disease was found to have a marked and very sharply limited season of prevalence the curve of which, with a slight lag, parallelled that of incidence

The study failed to disclose any consistent correlation between sanitary conditions and pellagra incidence. Such association as may at times be observed is regarded as accidental and to be explained by the intimate relation of the endemic disease to economic status, of which the sanitary condition may be an index.

The study reveals the existence of a striking inverse correlation between the incidence of the endemic disease and family income.

The continuous study of a selected village during a period of nearly six years appears to demonstrate that income shortage was a fundamental, though indirect, controlling factor in relation to the year-to-year fluctuation in the incidence of the disease. It is therefore inferred that the year-to-year fluctuations in the incidence of the endemic disease are bound up with fluctuations in economic conditions that influence the ability of a certain section of the population to procure an adequate diet.

Marked seasonal variations in the food supply of a selected village are demonstrated. A relation of this variation in food supply to the striking seasonal incidence and prevalence of the disease is suggested. —*United States Public Health Service.*

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14401

INTERMITTENT ORTHOPNEA WITH WHEEZING

MEDICAL DEPARTMENT

A married Italian woman forty-nine years old came to the Emergency Ward December 8. The complaint was dyspnea. An imperfect history was obtained from her son, as the patient spoke no English.

Ten years before admission she had swelling of the left leg, not of the right, with some dyspnea, tachycardia and palpitation on exertion. She continued to do hard housework, although at the end of the day she was unusually tired. She had occasional headache but no dizziness. From time to time the leg would be less swollen and she would tire less easily. About once a year her physician put her to bed for a week or two. Six months before admission her blood pressure was 230. Since that time her urine had shown albumin. Three months before admission she began to be tired all the time. Her left leg became more swollen and her right leg began to swell also. She began to sleep on two pillows and recently had required three. Her physician made her stop working. She walked only from her bed to her chair. She had indigestion and recently had tolerated only the simplest foods. Occasionally at night she had to sit upright in order to breathe. At these times there was wheezing. She urinated once at night. Her physician made five dry taps of the abdomen. She had taken digitora pills, one every six hours for twenty days. The date of starting was not known. Later she took ten drops of digitalis three times a day.

Her family history is irrelevant except that one living son had a weak heart.

Clinical examination showed an obese woman lying propped up in bed, dyspneic and orthopneic, with cyanotic lips and possible jaundice. (The light was poor.) There were two carious teeth. The tonsils were large, injected and boggy. The apex impulse of the heart was not seen or felt. She was too obese for accurate percussion measurements. There was apparent enlargement. The action was regular, with gallop rhythm. The sounds were poor. There was a blowing systolic murmur at the apex, heard also at the base. There was alternation of pulse. The blood pressure was 150/110. The abdomen was greatly distended. The wall showed edema. There was shifting dullness. No organs were felt. There was massive edema of the legs, less of the thighs. The pupils were normal. The knee-jerks and ankle-jerks were not obtained.

The amount of urine is not recorded. A catheter specimen was dark and showed specific gravity 1.012, a large trace of albumin, 10 to 15 leukocytes and 0 to 1 red cell per high power field. Renal function 20 per cent. Hemoglobin 80 per cent, reds 5,820,000, no achromia, slight anisocytosis, rare poikilocytosis and polychromatophilia, platelets normal, 10,200 leukocytes, 78 per cent polymorphonuclears, 3 per cent young polymorphonuclears. Wassermann negative. Stool negative.

Temperature 97° by mouth to 101.5° by rectum. Pulse 118 to 148. Respirations 34 to 19.

Venesection was attempted December 9, but the blood pressure was so low—110/90—that only 20 cubic centimeters was withdrawn. An abdominal tap done below and to the left of the umbilicus with the patient in the left lateral position was dry.

December 9 the patient died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY AND PHYSICAL EXAMINATION

Since the history is imperfect, we will focus our attention mostly on the physical examination.

1. If you ask how we account for the swelling of one leg before the other I cannot give any certain answer, but I can guess that it is varicose veins plus a little passive congestion. That would make one swell, and when she got more passive congestion the other leg swelled too. There may be some venous obstruction from a thrombus on that side and later simply edema on the other.

2. Of course there is no special significance in "wheezing". Under these conditions anyone who has sufficient dyspnea to keep him upright is likely to wheeze.

A STUDENT: Do you believe in cardiac asthma, Dr. Cabot?

DR. CABOT: I do not like the term. I am certain that we have cardiac dyspnea which seen in an attack may not be possible to tell from asthma. I do not like to make a diagnosis of asthma until we have some relation to an external or internal irritant as cause.

3. "Her physician made five dry taps of the abdomen." He was a persevering person. I think four would be enough.

4. I suppose you know what to say about ten drops of digitalis three times a day. You might

just as well pour it down the sink. Yet it is the commonest dose in the country with people out of reach of hospitals.

5. Gallop rhythm is a very convenient term. You listen to the heart and you say, "I do not know what it is, but it sounds like a horse". You do not know that it is, but you say it is gallop rhythm. I do not like the term, because it makes us content to go on without saying what it is, and we ought to commit ourselves on that, it seems to me. I know no *one* thing that we can call "gallop rhythm", which means three heart sounds, some two of them close together. I do not know any one lesion which we can say that means. It is like the old term "delirium cordis," which we now call auricular fibrillation. I should like to see the term "gallop rhythm" given up.

6. "There was alternation of pulse." What does that mean?

A STUDENT: A bad prognosis.

DR. CABOT: I do not know any more useful prognostic sign than alternation of the pulse. But it is very important to get hold of the right thing and to be sure you have alternation and not coupling. In coupling of the heart beats we have an ordinary beat and then a very weak beat and then a pause. We hear it best at the apex; it means ordinarily nothing more than that there is a large amount of digitalis in the system. In alternation the beats go on perfectly regularly; it is not an arrhythmia; whereas in coupling of the heart beats there is arrhythmia. In alternation there are often also extrasystoles, but between them no arrhythmia, though every other beat is stronger than the ones after and before it. We cannot feel it in the pulse. We get it in the pulse tracing, and when we are taking the blood pressure we notice that every other sound at one point is much louder or that the rate suddenly changes. We feel and hear twice as many as we did before. It is a thing to notice when we are taking blood pressure. There is no difference between the two legs now.

I do not stress the absence of knee and ankle jerks in a patient as sick as this. With edema we often get absent reflexes without any reason to blame the cord or the peripheral nerves.

The important points in the urine are the low gravity and the absence of gross blood.

The high red count is due to cyanosis. That is a negative blood essentially.

"Venesection was attempted . . . only 20 cubic centimeters was withdrawn." That is very often the case in cardiac cases. It is rather humiliating at times. There may not be blood pressure enough to make the blood come out.

DIFFERENTIAL DIAGNOSIS

In a patient with clear evidence of hypertension and cardiac death we usually say "cardiac hypertrophy and dilatation". We have no evidence of valve lesions, no reason to suppose the heart will show anything in particular except hypertrophy and dilatation. There may be a fibrous myocarditis, but we have no way of saying that, no definite signs of that condition.

DR. TRACY B. MALLORY: There is an X-ray.

DR. CABOT: Yes. It does not add particularly, I think, to what we have reason to believe without it.

What shall we find in the kidneys? We have rather poor information, but I should say we are not going to find much. We do not know whether they could concentrate urine. We have only one specimen. If we knew they could not we should think of a definite nephritis. She has had no uremic symptoms. On the whole I should say the best guess—and it cannot be better than a guess—is that the kidney will not show nephritis; but it is perfectly possible that it will show a vascular type of nephritis.

The lungs and the rest of the body ought to show passive congestion. I do not see why they should show anything more.

After reading the history of this case we should say we have a case of primary hypertension—without quite knowing what that means except that we find no cause for the hypertension—leading to hypertrophy and dilatation of the heart and finally to failure of the heart, perhaps to a nephritis, although I am inclined to think not, perhaps to marked arteriosclerosis, though I do not see any particular reason to say so. I believe the usual sequence of events is hypertension, hypertrophy and dilatation, sometimes (later) arteriosclerosis and nephritis.

A STUDENT: Is that the common sequence?

DR. CABOT: It was not believed to be common ten years ago. I should say, though, that it is now. That is not denying that there are some cases in which the kidney lesion comes first. But I think the ordinary sequence is hypertension first.

A STUDENT: How about the large trace of albumin in the urine?

DR. CABOT: Passive congestion she certainly had, and that is enough to account for that. It might also go with nephritis, but we have no sufficient evidence of that.

A STUDENT: Could you have a low specific gravity with such a large trace of albumin?

DR. CABOT: That is a good point, in view of passive congestion. Yes; the low gravity is against passive congestion, but it does not exclude it.

A STUDENT: There is shifting dullness and the abdominal tap was dry. How do you account for that?

DR. CABOT: She was very fat. When you come to tap fat patients you will find that now and then you will not get fluid. You have to go a long way and you do not want to hit the in-

testine, so you do not want to push the needle any further.

A STUDENT: How do you account for the difference in temperature by rectum and by mouth?

DR. CABOT: I do not know. My guess is that she did not shut her mouth. If we have just been running and someone puts a thermometer in our mouths we are liable to open our mouths and let in some cold air.

A STUDENT: Is that urine a catheter specimen?

DR. CABOT: Yes. That rules out vaginal discharge, but it does not seem to be enough to back any diagnosis of urinary infection on.

A STUDENT: Does not the fact that she has had albumin for six months fit the kidney involvement?

DR. CABOT: I should say you could have albumin for six months without nephritis. But the point that you question is exactly the weak point in my diagnosis. I do not know enough about the kidney. It is perfectly possible that I am going to be wrong on that.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Hypertensive and arteriosclerotic heart disease with congestive failure.
Chronic nephritis ?

DR. RICHARD C. CABOT'S DIAGNOSIS

Primary hypertension.
Hypertrophy and dilatation of the heart.

ANATOMIC DIAGNOSES

1. *Primary disease.*

(Primary hypertension.)

2. *Secondary or terminal lesions.*

Hypertrophy and dilatation of the heart.
Coronary sclerosis, smaller radicles.
Arteriosclerosis, slight.
Bronchopneumonia.

3. *Historical landmarks.*

Chronic cholecystitis.
Adenomyomata of the uterus.

DR. MALLORY: She did have ascites in large amount, estimated between fifteen and twenty liters.

The abdominal wall showed approximately 8 centimeters of fat. The trocar that was used in attempting to get in was 7 centimeters long and had never reached the peritoneum.

Her heart was quite enormous, weighing over 700 grams, with normal valves. Hearts of that size very often show no pathology in themselves. It is also my impression that one does not usually find a chronic nephritis with a heart as large as that, and in this case the kidney showed nothing but passive congestion, as did the other organs.

The lungs were almost completely atelectatic from the enormous amounts of fluid in each pleural cavity.

There was a very slight cystitis, which probably accounts for the leukocytes in the urine.

Big hearts of course do occur with aortic regurgitation, sometimes almost as big as this. The biggest hearts, 800 and 900 grams, rarely show pathology in themselves.

A STUDENT: Do you think the hypertension was the only cause of that enlarged heart?

DR. CABOT: Probably.

DR. CABOT: Was there any arteriosclerosis?

DR. MALLORY: Almost none.

DR. CABOT: It seems to me it is a good case to file away in your memory,—(1) no kidney trouble, very little arteriosclerosis, this big heart and nothing to show for it but hypertension, and (2) a low gravity, 1.012, with passive congestion.

CASE 14402

A QUESTIONABLE ACUTE ABDOMINAL EMERGENCY IN A PATIENT OF LOW MENTALITY

SURGICAL DEPARTMENT

An eleven-year-old white American girl, a Mongolian idiot, was sent to this hospital from an institution with the following story.

The child had always tended toward constipation both at home and at the institution. The afternoon of the day before entry she vomited greenish material, became fretful and complained of abdominal pain. She had been constipated for a number of days previously. Milk of magnesia given by mouth was vomited. At this time the temperature was 104°. The mother was told by the school nurse that the child was apparently developing pneumonia. The child was however given a large dose of castor oil. Her bowels moved many times, and on several occasions blood was seen in the stool. The next morning the temperature was again normal. The general appearance of the child had improved. At midafternoon, however, vomiting was resumed. The child was fretful and on examination seemed to have a tender abdomen. Diarrhea continued. The temperature again rose to 104°. On advice from the school infirmary the child was brought to this hospital. There was no other history available, as she could give no information herself.

Physical examination showed a Mongolian idiot with flushed face lying on the examining table tossing about aimlessly. There was a marked odor of acetone on the breath. Physical examination so far as the heart and lungs were concerned was negative. It was practically impossible to find any point of tenderness on ab-

dominal examination, as the child would not lie quietly and muscular efforts completely obscured any spasm that might have been present. There seemed to be general tenderness over the entire abdomen. There was no possibility of the child's coöperating on examination. Rectal digital examination was unsatisfactory, as she would not keep still. She had one bloody stool after the rectal examination.

In view of the lack of further information on history or physical examination it was felt that the probable diagnosis was acute appendicitis. The parents, who came with the child, were advised to have her operated on immediately, understanding the possibility of appendicitis being the wrong diagnosis. They agreed, however, and the child was taken to the amphitheater and operated on.

Convalescence was rather stormy—white count 16,200—until the seventh day, when the temperature came down to normal from having fluctuated between 103° to 100°, the pulse from 130 to 100 and the respirations from 28 to 20. Finally all this quieted down and the rest of the convalescence was uneventful.

Discussion

BY A. WILLIAM REGGIO, M.D.

This case is interesting from the fact that we were dealing with a Mongolian idiot who could coöperate in no way toward helping us to make the correct diagnosis. All there was to go on was the story of the school nurse brought by the parents and the fact that the child had been sick for a day and a half complaining of abdominal pain and had been given a large dose of castor oil. The blood in the stool was very misleading, as an acute colitis could give the same picture that this child was presenting. The inability to determine whether there was any spasm or not was a handicap, and the general abdominal tenderness which seemed to be present might have been accounted for by either a colitis or peritonitis.

Under the circumstances the only wise procedure was adopted, namely that of operation.

PRE-OPERATIVE DIAGNOSIS

Acute appendicitis.

OPERATION

The appendix was very edematous and much swollen. The head of the cecum was edematous, with a few flakes of fibrin on the surface. The appendix was over the brim of the pelvis. There was much free fluid in the pelvis. Appendectomy done and sewed up without drainage.

Further Discussion

The edema found at operation about the head of the cecum might have been due to a colitis, but might also have been due to the acute appendicitis. The blood in the stool before operation and during the convalescence would point somewhat toward a colitis, although we have no further information upon this point.

This case in itself did not bring up any special difficulty so far as diagnosis was concerned. But the important feature of the case was that in dealing with a Mongolian idiot complaining of abdominal pain, with a white count of 16,000, presumably general abdominal tenderness and a dose of castor oil, it was unsafe not to operate. To be sure the temperature of 104° was rather high for an appendix; but the whole picture made one feel that operation was the wise course even though the diagnosis were wrong. This was proved by operation.

DIAGNOSIS

Acute appendicitis.

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THE COMMONHEALTH

The Commonhealth, the quarterly bulletin of the Massachusetts Department of Public Health, contains, in its issue for the third quarter of the current year, a valuable symposium on the venereal diseases. *The Commonhealth* is always worth reading and very frequently, as on this occasion, its contents are of unusual interest and value.

Following a short exposition of the purposes of the Massachusetts Society for Social Hygiene by its president, Dr. Cecil K. Drinker, is an article on the treatment of gonorrhoea in the male by Dr. J. Dellinger Barney. A paper on gonorrhoea in the female is contributed by Dr. A. Paine, Surgeon-in-Chief of the Department of Gynecology of the Boston Dispensary, and one on the treatment of syphilis by Dr. Austin W. Cheever, also of the dispensary staff. Two papers on social work follow, one on social work and syphilis by Maida H. Solomon, from the Boston Psychopathic Hospital Social Service Department, and one on the rôle of the social worker in the treatment of gonorrhoea by Madeline C. Everett of the Department of Health. Dr. Helen I. D. McGillicuddy, Executive Secretary of the Massachusetts Society for Social Hygiene, and Dr. N. A. Nelson, Epidemiologist in charge of venereal disease control of the Department of Public Health have contributed the preliminary report of a statistical study of syphilis and gonorrhoea in Holyoke, Massachusetts.

Dr. John H. Stokes, according to an editorial comment in *The Commonhealth* has stated that gonorrhoea is almost as common as measles, and is a disease affecting 50 to 60 per cent. of males at some time in their life history. In view of this statement it is no credit to local public health officials that in 1925, when syphilis and gonorrhoea were made reportable to the local boards of health in Massachusetts rather than to the State Department of Health as formerly, syphilis and gonorrhoea began to disappear from several communities. In fact, thirty-one cities of from ten to sixty thousand population immediately began to wipe out gonorrhoea.

The venereal diseases constitute the same problem as always and they can be combatted only in the open.

LONGEVITY OF COLLEGE ATHLETES

THE ghost of the athletic heart, so long an American bugbear, is at last being laid. During his ten years as professor of hygiene at Harvard, Dr. Roger I. Lee pointed quite clearly to the truth—that organized and well conducted athletics, including even crew racing and football, do not injure previously healthy hearts.

Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, now comes to the fore with convincing actuarial proof pointing in the same direction. This evidence was published in *Harper's Monthly Magazine* for July, 1928.

Previous to Dr. Dublin's study, no good statistics concerning the longevity of athletes was available. A few attempts at the solution of the problem had been made. Thus, in 1906 a study made by Gaines and Hunter of the longevity of Yale athletes graduated prior to the year 1905 indicated that the athlete was a better risk than the average insured man of his time, and also better than the run of college men of the same classes. Fragmentary studies had also been made at Harvard and at other schools.

Three years ago Dr. Dublin was enabled to make a study of the athletes of ten leading colleges who graduated in the year 1905 and earlier. The best standard by which to compare these mortality figures would naturally be the non-athletes of the same colleges, but as this material was not available, two insurance tables in vogue at the present time were used. These are the Medico-Actuarial Table and the American Men Table of Mortality. Each of these tables is based on "standard lives"— that is, on those who, on medical examination, were found to be free from physical impairments which

would be expected to bring about death prematurely, and who were also unexceptionable on the score of occupation. Pretty consistently the athletes showed a favorable mortality.

There were, however, curious differences based on the age groups, and on different sports. Thus, of the various sports, baseball showed the highest mortality. After the age of 45 also, the athletes did better than below this age. Among the younger men the most frequently recorded cause of death was tuberculosis, with pneumonia and typhoid fever also frequently reported. Among those who died at ages over 45, 32 per cent. of the deaths were ascribed to heart disease, as against about 20 per cent. among selected insured lives. It is Dr. Dublin's opinion that the damage which has been done by athletics was done in the early periods of loose supervision. While it is difficult to prove absolutely that athletics does not injure hearts, it is fair to assume that those hearts which seemed to have been damaged by it, were actually impaired in the first place; further damage, of course, would be done by the unusual strain.

The argument is in favor of careful supervision of athletics and of athletes, with regular physical examination to eliminate those who are not in a fit condition to indulge.

STARVE THE RATS

Surgeon General Cumming is trying to enlist the people of this country in a campaign against rats. These rodents are a sanitary and economic menace. The control lies with the average householder. Experts can destroy rats in large numbers under certain conditions by the use of poisonous gases but the ordinary person may not use such destructive forces safely. The advice of the Surgeon General is to starve the rats by keeping food supplies beyond their reach and rat proofing dwellings and storehouses.

It is estimated that rats consume two hundred million dollars worth of food every year and destroy a like amount of property. As a menace to life during a twenty years period ending in 1923 over eleven million people in India died of bubonic plague. The principal agent in the spread of this disease is the rat. Rats are ubiquitous and filthy creatures of great fecundity.

We should ally ourselves with the Public Health authorities in fighting this enemy of health and economy.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Finland, Maxwell. S.B., M.D. Harvard, 1926. Charles Follen Folsom, Teaching Fellow in Hygiene, Harvard Medical School. Resident, Second Medical Service. Boston City Hospital. Address: Boston City Hospital, Boston. Associated with him is:

Davis, David. B.S., M.D. Cornell, 1925. Member of the Staff, Boston Dispensary. Assistant to Dr. Joseph H. Pratt, in charge of Electrocardiogram Department. Their subject is: "An Unusual Distribution of Peripheral Gangrene In a Case of Subacute Bacterial Endocarditis". Page 1019. Address: Boston City Hospital, Boston.

Rackemann, Francis M. A.B., M.D. Harvard, 1912. Instructor in Medicine, Harvard Medical School. Chief of Medical Out-Patient Department, Massachusetts General Hospital. Chief of Anaphylaxis Clinic, Massachusetts General Hospital. His subject is: "Studies in Asthma. VIII. The Incidence and Severity of Asthma According to the Season of the Year". Page 1021. Address: 263 Beacon Street, Boston.

Archibald, Edward. B.A., M.D. McGill, 1896. F.R.C.S. (Eng.) Hon. F.A.C.S. Professor of Surgery, McGill University. Senior Surgeon, Royal Victoria Hospital. Consulting Surgeon, Children's Memorial Hospital. Consulting Surgeon, Shriners' Hospital. His subject is: "The Selection of Cases of Pulmonary Tuberculosis for Surgical Intervention". Page 1025. Address: 900 Sherbrooke Street, W. Montreal.

Criscitiello, M. Jr. A.B., M.D. Johns Hopkins University 1921. Pathologist, St. Luke's Hospital, Pittsfield, Mass. His subject is: "Hyperplasia of the Endometrium with Report of Cases". Page 1034. Address: Bank Row, Pittsfield, Massachusetts.

Nittis, Savas. M.D. National University Athens, Greece, 1922. Voluntary Assistant in the Department of Internal Medicine, University of Michigan Medical School, Ann Arbor. His subject is: "Pyretotherapy in the Treatment of Gonorrhea by Aseptic Abscess". Page 1041. Address: 507 Kresge Building, Detroit, Michigan.

Orton, Samuel T. B.S., M.A., M.D. University of Pennsylvania, 1905. President, American Psychiatric Association. Second Vice-President American Neurological Association. Member Editorial Board *Archives of Neurology and Psychiatry*. Formerly Professor of Psychiatry State University of Iowa. His subject is: "Physiological Theory of Reading Disability". Page 1046. Address: 50 Morningside Drive, New York City.

THE CAMPAIGN FOR THE UNITED BUILDING AND ENDOWMENT FUND OF THE MEDICAL LIBRARY AND THE MASSACHUSETTS MEDICAL SOCIETY

THE campaign for the United Building and Endowment Fund of the Boston Medical Library and Massachusetts Medical Society got well under way in Boston during the past week.

More than a hundred physicians attended the organization dinner at the Harvard Club on Tuesday, November 16. On Thursday about forty members of the Special Gifts Committee, Dr. Roger I. Lee, Chairman, met and selected names of persons to be approached in behalf of the Fund. The next evening sixty members of the Suffolk and Norfolk District Committees met together, with a few representatives of Middlesex South, for the same purpose. Dr. James B. Ayer, Chairman of the Suffolk County, presided. The first report meeting for these committees will be held at the Harvard Club Tuesday, November 27, at 12:30, when results of the first week's work will be brought in.

Efforts will be concentrated in Boston up to the Christmas holidays. Soon after the first of the year, organization will be effected in the sixteen district societies outside Boston. The attractive booklet prepared for use in the campaign will shortly be sent to all members of the Medical Society, together with an outline of proposed plans. The sum sought, $650,000, covering the absolutely necessary expansion needs of the Library, the long desired headquarters of the Medical Society and a fund for the beginning of activities of a Medical Centre for New England, is possible of attainment, provided all members of the profession co-öperate in the plans which have been carefully prepared.

At the organization dinner on Tuesday, Dr. John W. Bartol presided and briefly outlined the objects of the meeting. Dr. John M. Birnie, President of the Medical Society, was the first speaker. He indicated some of the ways in which the Society has been useful, not only to its members but to the public at large. Concerted work for desirable health legislation, especially along the lines of preventive medicine, defense of measures already enacted but continually attacked, protection of the public against unqualified or improper practitioners, and other points were emphasized.

The Medical Society has held its meetings in the Library for fifty years. Its office accommodations have been elsewhere. Now that the NEW ENGLAND JOURNAL OF MEDICINE has become the property of the Society, the desirability of sufficient accommodations for both in one place has become a necessity. No place could be better than the Library. This campaign is intended to make this possible.

The second speaker, Dr. Walter P. Bowers, outlined the character of the Medical Center for New England, funds for the beginning of which are also being sought in the campaign. Co-öperation of the many organizations that, in one way or other, are concerned with public health has long been desirable. The dentists, nursing and various other kindred organizations will, if they choose, be able to secure offices in the enlarged building. Under its revised charter the Library is committed to the task of initiating and developing a program of united action in the interest of medical education and medical advancement.

Dr. Richard G. Wadsworth reviewed the history of the Library, and called attention to some features of its service which are apparently not familiar even to the profession. Its system of loans to physicians anywhere in New England, through their local libraries, and its readiness to provide bibliographic information on periodicals or other sources of information in special fields of medicine were particularly emphasized. The Library welcomes a great variety of visitors. Lawyers use it in preparation of cases involving injury, manufacturers frequently seek information; legislators and those interested in medical legislation consult its collections. Its largest use, by medical students, research workers, and practitioners requiring special information for immediate use, is of course ultimately beneficial to patients. Indeed, whatever use is made of the Library results in the end in benefit to individuals and the community.

After a brief explanation of the arrangements between the co-öperating organizations, Dr. Bartol outlined the several elements of the budget of $650,000 which is being sought, and the Campaign Director explained the methods which will be followed. Every effort will be made to secure the understanding by laymen of the value, not only to the profession but to the whole community of New England, of the Library, fourth largest in the country, into which individuals and institutions through New England have delivered their medical collections so that they might be available under one roof to all who have need to use them. The Joint Committee in charge is confident that, by the accomplishment of such understanding, the service which has outgrown the ability of the medical profession alone to support, will receive the interested aid of public spirited men and women throughout the state.

The enthusiastic response to the call for the organization dinner is indicated by the fact that the Esculapian Room at the Harvard Club was filled to capacity and a second dining room for some twenty-five more was brought into use. At least 150 physicians have undertaken to seek contributions in Boston. A similar response is hoped for when the Committee undertakes organization throughout the state.

THE BOSTON MEDICAL LIBRARY

Now that the drive for financial support to meet the combined needs of the Massachusetts Medical Society, the Boston Medical Library and a group of organizations interested in the promotion of the public health has been inaugurated, it is a good time for all who are in a position to contribute or secure contributions from others, to try to visualize for themselves the situation that would exist were there no such organizations. Perhaps this is the best way to arrive at an appreciation of their value to the community. Suppose there was no organization corresponding to the Massachusetts Medical Society. There would be fewer restraints upon the doctors of the State such as are imposed by the pledge one makes as to his conduct, when he joins. He would be entirely free to conduct his practice within the letter of the law without any reference to the rights or desires of his fellow practitioners or the public. Under such circumstances can there be any doubt that there would be more petty rivalries, competitive bickerings and unethical conduct of various sorts than there are and that this would split the medical profession into various camps, hostile to each other and so estranged that no concerted action for the public weal would be possible for them? Who would be the greatest sufferer from such a state of affairs? Would it not most certainly be the public? What safeguard would the public have against the exploitation by cultists of their claims for a right to practice their art, unrestrained by educational requirements which ensure safety to the people? What machinery would there be to marshal the forces of the qualified profession to meet the emergencies of an epidemic, threatening the State? What but membership in the Massachusetts Medical Society authenticates the testimony that may be given in the Courts, before the Industrial Boards or the counsel proffered in countless positions of trust and responsibility where a physician's services are required, such for example as the local town and municipal health boards, life insurance companies, etc. The physician himself knows how important it is for him to hold membership in such an organization, for without it he would be ineligible for many Societies both within and without the State, to which he might like to apply for membership. To whom does one go when he has some proposal that seems to him to promote the health interests of the Public? The backing of the Massachusetts Medical Society is oftentimes all that is required to put such a measure across.

The wider public health interests and those that peculiarly concern New England, can only be most successfully dealt with by such an organization. It already has been largely instrumental, by co-öperating with the New Hampshire State Society, in forming a Council of the State Societies of New England, the object of which is to confer on all matters of public health affecting this section of the country. THE NEW ENGLAND JOURNAL OF MEDICINE, as the official organ of three of the New England State Societies, is their spokesman, destined to wield a very strong influence in all matters affecting the health interests of these localities. Were the JOURNAL a commercial enterprise and not the mouthpiece of a powerful organization, it is not reasonable to suppose that it could have the influence assured by the prestige of the organized medical profession. Based on these activities of the Massachusetts Medical Society there is, clearly, ground for the claim that the public is vitally interested in anything that will enable it to increase the efficiency of its activities and expand to meet an ever-increasing opportunity for service.

Conceive, if you can, the effect upon the progress of medical science and practice in this community if there were no such institution as the Boston Medical Library. There would be an immediate cutting off from a large majority of those members of the medical profession who fully realize their responsibility to the public to keep their knowledge of progress in their chosen field up-to-date, the sources of information upon which their individual progress is dependent. It would prevent, or seriously handicap, those who are capable of making contributions to the advancement of medical and public health progress in all its forms, from fulfilling their mission. There would be no repository for the records of the lives and accomplishments of those who have worked for the preservation of health, the relief of suffering and the physical well-being of humanity.

The priceless embodiments of the progress of medical art from the earliest printed books down to those of the present time, an invaluable record, would be wholly inaccessible to many of those to whom they are of the greatest value. Modern channels of communication make these resources available for those quite remotely situated and frequent advantage is taken of these facilities. In modern life there are many, outside the medical profession, who find it advantageous to have access to a large collection of medical books; the courts and the legal profession are making frequent calls upon this Library for assistance. Those who are teaching in the field of medicine would find it a hopeless task to supply themselves with the enormous number of periodicals and books that constitute the working equipment of those whose business it is to guide the instruction of the future physician. A goodly amount of scientific research, having a purely scientific bearing, finds its way into Medical Libraries, making it necessary for scientists, working in other fields than medicine, to have access to such libraries. There is a growing

tendency to cause the undergraduate medical students to resort to the use of reference books in the course of the acquisition of their degrees and a duplication of much of the material they require, in a medical school library, is unnecessary and wasteful. Where graduate medical students gather in any considerable numbers, as they do here, a comprehensive Medical Library is indispensable. The loss to the public therefore would be very great if all these various interests could not have the advantages of a large medical library close at hand. It requires only a little focusing of the attention on the matter to see the advantage to the public, as well as to the individual organizations, if a common roof could shelter the headquarters of as many as possible of the societies who devote their efforts to promoting the public health. Much of their work is overlapping and where their administrative officers cannot easily come in touch with each other frequent opportunity for co-öperative effort is missed. Scarcely any of their activities but what are of intimate concern to the profession at large and for which easy access to the administrative officers of the State Society and the Editorial and publication offices of the NEW ENGLAND JOURNAL OF MEDICINE would not be of the greatest benefit. They all have frequent need for the aid which a large general medical library with its books and current literature can afford. If their offices were in the Library building their work could be that much more facilitated. Meeting places for committee work and general assemblies of various local societies, the preparation of their programmes and notification of their activities, with a probable avoidance of duplication of efforts of various kinds, would be far more possible when all these activities were gathered about a medical center. Much of this might be provided for at the outset and expanded to include all, as necessity or opportunity demanded. There is much in this proposed co-öperative endeavor which can be sold just as well outside metropolitan Boston as within it, for what benefits the public in one place benefits it in the other also and the central feature of the entire project is not the procurement of more agreeable working conditions for the medical profession but is, primarily, an effort to place in the service of the public the most effectively equipped machinery for solving the health problems of the people of Boston, Massachusetts and New England.

MISCELLANY

NATIONAL BOARD EXAMINATIONS

The February 1929 examinations in Parts I and II will be held on the 13th, 14th and 15th. This examination will be held in all cities where Class A medical schools are located provided five or more candidates are available.

Candidates who are registered should notify the Board of their intention to take this examination. If their fees have been paid, the admission cards will be mailed to them about December 1 or as soon as an examination has been arranged in the center desired.

Candidates not registered should forward their application for registration not later than January 10 or earlier if possible.

All fees should be paid not later than January 10.

Examinations in Part III will be held in January 1929 in Boston, Chicago and New York City. Candidates desiring to take part in these examinations should notify the National Board promptly, as the number that can be accommodated is limited.

Part III will also be held in any other center in which a subsidiary board is established, provided a sufficient number of candidates apply.

DR. WILLIAM H. GORDON ASSIGNED TO MARINE HOSPITAL, PORTLAND, MAINE

Assistant Surgeon William H. Gordon has been transferred from El Paso, Texas, to the U. S. Marine Hospital, Portland, Maine.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about Three Hundred Dollars, will be made on July 14, 1929, provided that an essay deemed by the Committee of Award to be worthy of the Prize shall have been offered.

An essay intended for competition may be upon any subject in Medicine, but must be accompanied by a written assurance from the author that it has not appeared previously in print, either in whole or in part, in any form, and has not been presented elsewhere in competition for a prize. The essay should represent an addition to the knowledge and understanding of the subject based either upon original or literary research. It must be typewritten, and in English acceptable for publication without necessity for editing by the Committee. Any illustrations should be appropriate and correctly annotated with the text. Essays must be received by the Secretary of the College on or before May 1, 1929.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelop having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; and that it may be published by the author with the consent of the College; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1928 has been awarded to Drs. J. R. Paul and W. U. McClenahan, Phil., for their Essay entitled: "A Pathological Study of the Pleural and Pulmonary Lesions in Rheumatic Fever."

JOHN H. GIRVIN, *Secretary*,
19 South 22nd Street, Philadelphia, Pa., U. S. A.

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT
WITH 1927 AND SEVEN YEAR AVERAGE
MONTH ENDING OCTOBER 27

DISEASES	1928					1927			
	Wk. ending Oct. 6	Wk. ending Oct. 13	Wk. ending Oct. 20	Wk. ending Oct. 27	Average cases reported for week corresponding to October 27 for past seven years.	Wk. ending Oct. 8	Wk. ending Oct. 15	Wk. ending Oct. 22	Wk. ending Oct. 29
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	16	-	-	1	-	-
Cerebrospinal Men.	-	-	4	-	1	2	2	1	1
Chickenpox	15	47	38	59	52	61	58	41	59
Conjunctivitis Inf.	-	1	-	-	2	-	-	-	1
Diphtheria	29	21	19	18	51	36	38	29	32
Dysentery Amoebic	-	-	-	-	-	-	-	-	-
Dysentery Bacillary	-	-	1	-	-	-	-	1	1
Encephalitis, Epid.	-	-	1	-	-	-	-	1	1
Favus	-	-	-	-	-	-	-	-	-
German Measles	3	1	5	1	1	1	3	1	1
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	12	3	2	3	3	2	5	-	3
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	1	-	-	-	-	-	-	-	1
Measles	5	27	35	48	35	14	19	2	11
Mumps	7	12	9	18	16	13	8	21	22
Paratyphoid Fever	-	-	1	-	-	-	-	1	1
Pneumonia (Broncho)*	23	9	26	24	13	14	12	16	11
Pneumonia (Lobar)	16	28	18	19	22	23	17	17	20
Poliomyelitis	6	4	3	6	3	13	8	9	9
Scarlet Fever	12	22	21	22	51	21	15	30	38
Septic Sore Throat	3	-	1	3	3	2	1	-	1
Smallpox	-	-	-	-	-	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	1
Trachoma	-	-	-	-	-	-	-	-	-
Trichinosis	1	-	-	-	-	-	-	-	1
Tuberculosis (Pul.)	43	25	20	16	30	21	32	45	48
Tuberculosis (O.F.)	4	1	1	1	3	2	-	-	3
Typhoid Fever	1	6	1	1	7	3	5	4	6
Tularemia**	-	-	-	-	-	-	-	-	-
Typhus Fever	-	-	-	-	-	-	-	-	-
Undulant Fever**	-	-	-	-	-	-	-	-	-
Whooping Cough	43	27	33	35	47	25	21	50	61
Gonorrhoea	47	32	49	60	18	134	38	22	47
Syphilis	54	35	61	48	23	79	27	28	38

*Made reportable January 1, 1925.
**Made reportable July 1, 1928.

Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

CORRESPONDENCE

THE TYPHOID CARRIER PROBLEM AND AN APPEAL TO HOSPITALS FOR SPECIMENS OF BILE

November 13, 1928.

NEW ENGLAND JOURNAL OF MEDICINE:

It may interest your readers to know that we feel that four typhoid carriers who had their gall bladders removed over a year ago are now cured of their carrier condition. One of them is, we understand, to be reported in detail by Dr. Leon S. Medalia. We have given such individuals statements to this effect, and are following three others who have not yet completed the examinations during the year following their operation. Three of the four were professional food handlers, operated on at the State's expense. Two of these had caused outbreaks through the vehicle of raw milk. The third was a maker of butter outside of North Adams. Although no definite cases could be traced to the consumption of this butter, we feel that there was a possibility that the sporadic cases which had occurred in North Adams during the last ten years might in part have been infected in this way. If that is the case, the number of infections in the future should be definitely reduced.

Before stating that in our opinion the post-operative case is safe to return to food handling so far as spread of infection is concerned, the following examinations are required:

(1) At least one negative stool each month for a year.
(2) At the end of the year, a negative bile culture.
(3) Negative stools following an artificially created diarrhea.

This last is required since in at least one instance an intermittent carrier had shown organisms following an intestinal upset.

Since we recommend gall bladder removal in this condition only after a positive duodenal culture has been obtained, we have felt that the percentage of cures should be higher than has been reported in the past.

We are contemplating asking all the hospitals of the State to routinely send in samples of bile in all cases of gall bladder operation. Typhoid carriers are more likely to have gall stones than the normal individual, and a certain number of cases should be picked up in this way who can be followed, and will add to our figures more rapidly than if we limited them to the individuals who are operated on primarily for their carrier condition.

Yours truly,
GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

ARTICLES ACCEPTED BY THE AMERICAN MEDICAL ASSOCIATION COUNCIL ON PHARMACY AND CHEMISTRY

535 North Dearborn Street, Chicago, Ill.
October 27, 1928.

Managing Editor, the NEW ENGLAND JOURNAL OF MEDICINE,

Dear Doctor:

In addition to the articles enumerated in our letter of September 28th, the following have been accepted:

Abbott Laboratories
Capsules Ephedrine Hydrochloride—Abbott, ⅜ grain

Lederle Antitoxin Laboratories
Tablets Whole Ovary—Lederle, 2½ grains

Eli Lilly & Co.
Antimeningococcic Serum Concentrated—Lilly
Antistreptococcic Serum, Purified and Concentrated (Lilly)

Mallinckrodt Chemical Works
Iso-Iodeikon

Merck & Co., Inc.
Optochin Base
Optochin Hydrochloride

H. K. Mulford Co.
Mulford's Acidophilus Bacillus Blocks
Tetanus Antitoxin (Bovine)

Parke, Davis & Co.
Capsules Ephedrine Sulphate—P. D. & Co., ⅜ grain
Capsules Ovarian Substance, Desiccated—P. D. & Co., 5 grains

E. R. Squibb & Sons
Tablets Protargentum—Squibb, 4.6 grains
Tablets Solargentum—Squibb, 4.6 grains

Swan-Myers Co.
Syrup Ephedrine Hydrochloride (Double Strength)—Swan-Myers

Nonproprietary Articles
Ethylhydrocupreine
Phentetiothalein Sodium

Yours truly,
W. A. PUCKNER, *Secretary,*
Council on Pharmacy and Chemistry.

THE RELATION BETWEEN THE MASSACHUSETTS MEDICAL SOCIETY AND THE BOSTON MEDICAL LIBRARY

To the Editor:

A bit of recent history may help your readers to understand the relationship between the Massachusetts Medical Society and the Boston Medical Library in the fund raising effort now in progress.

Early in 1928, the Society started an attempt to raise $125,000 for permanent headquarters. In some sections canvassing of members was active and thorough, several towns and cities showing 100% of support. In others the effort was postponed. All together about $17,000 was secured.

For 15 years the Library had been waiting a favorable opportunity to secure funds to relieve the congestion that was evidenced already in 1913. Stimulated no doubt by the action of the Society, the Library executives decided to undertake their delayed campaign.

Conferences were held and the Society suspended its separate effort in order to join with the Library for a united campaign. The total objective is $650,000, of which $100,000 is allocated to the Society. This sum or such proportion of it as the campaign may yield, will be held by the Society as endowment. The income will be used to pay the rent of the space assigned to the Society in the new library building. If at any time by mutual agreement a separation should be determined upon, this capital fund would be available for the purchase of a building.

For the needed enlargement to its building and for maintenance and care, the Library requires

$500,000. Fifty thousand dollars is allocated to initiate the program of the Medical Center for New England. This of course means only a beginning. The revised charter of the Library commits it to the broadest undertakings for the advancement of medical science and medical undertakings.

It is the constant hope of the Joint Committee in charge that physicians who have already contributed to the Society's fund will feel no impropriety in the appeal of the Library for a subscription from them. Had the co-öperative arrangement not been made, the Library would have made a separate appeal and there can be no doubt that it would have been honored.

The present united campaign seeks support from the laity as well as the profession. Reflection leads to the inevitable conclusion that the patient is the ultimate beneficiary of all that increases the physician's power. The legislative and numerous other concerted activities of the Society are all in the interest of public health. A ready resource for new or rarely used information may save—indeed has saved—the lives of patients.

These organizations have so far been supported by physicians without lay assistance. By the excellence of their service they have been forced to expand beyond the point where the profession alone can finance it. That laymen should now assist and that physicians should not hesitate to ask that assistance seems entirely justified.

JOHN W. BARTOL.

THE MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

(From Our Special Correspondent)

New England was well represented at the fifty-seventh annual convention of the American Public Health Association, held in Chicago from October 15 to 19, 1928. The meeting was the largest in the history of the Association, with more than 2500 persons registered, though this increase of more than 1000 over the previous high record was due partly to the fact that a number of other organizations, such as the American Child Health Association, the American Social Hygiene Association, and the Illinois Health Officers Association held meetings in conjunction with the American Public Health Association.

Not only were many New England health officers, public health nurses, and sanitary engineers present at the convention, but about a score of the scientific papers were delivered by New Englanders. Thus, Dr. George H. Bigelow spoke on the State Cancer Program in Massachusetts. Professor C-E A. Winslow of Yale spoke on International Health Problems and also presented a report on administrative health practice, and Professor C. E. Turner of the Massachusetts Institute of Technology presided at a conference on the training of sanitarians and also spoke on health education. Among others from New England who participated were Dr. L. Greenburg and Dr. L. F. Rettger of Yale; Dr. H. C. Stuart of the Harvard School of Public Health; Mr. G. M. Fair of Harvard; Miss S. C. Nelson and Miss Miriam Ames of the John Hancock Life Insurance Company; W. C. Welling, F. L. Mickle, J. G. McAlpine, and Dr. S. Josephine Baker of Connecticut; Dr. D. L. Richardson of Providence, R. I.; E. S. Chase and H. P. Eddy, sanitary engineers of Boston; and Miss G. B. Collins of the Massachusetts Institute of Technology.

Resolutions were adopted urging Congress to pass the Parker bill for federal health co-ördination over the veto of the President; requesting Congress to continue federal aid for health work in counties in the flooded and hurricane areas; urging Congress to pass a bill recognizing the army and civilian heroes of the yellow fever experiment in Cuba under Walter Reed; calling upon Congress to grant second-class mailing privileges to county and municipal health bulletins; and recommending the more efficient general reporting of tuberculosis.

For the first time in many years a sanitary engineer, Mr. George W. Fuller of New York, was elected president of the American Public Health Association, succeeding Dr. Herman N. Bundesen of Chicago. Other officers were elected as follows: first vice-president, Dr. A. J. Chesley of Minnesota; second vice-president, Dr. Norman MacL. Harris of Ottawa, Canada; third vice-president, Dr. Louis J. Schmidt of Chicago; treasurer, Professor E. O. Jordan of Chicago. Dr. George F. Buchan, president of the Society of Medical Officers of Health of England, who was present, was elected an honorary fellow of the Association.

THE DELTA OMEGA SOCIETY

(From Our Special Correspondent)

Massachusetts is particularly well represented among the new officers of Delta Omega, the honorary public health society, which held its annual meeting at Chicago on October 15, 1928, at the time of the convention of the American Public Health Association. Lieutenant Colonel Edward G. Huber, who was elected president of Delta Omega, received his doctorate in public health from the Harvard School of Public Health, while Dr. James A. Tobey received this same degree from the Massachusetts Institute of Technology. Dr. C. C. Young, who was elected vice-president, is likewise a graduate of the Massachusetts Institute of Technology, though his doctorate in public health was obtained at the University of Michigan.

The Delta Omega Society now has about 200 members, and has chapters at the Johns Hopkins School of Hygiene and Public Health, the Massachusetts Institute of Technology, the Harvard School of Public Health, the University of Michigan, the Yale School of Medicine, and the University of California.

THE DOVER POLICE

AN OLD AND HONORABLE RECORD OF A MEDICAL SOCIETY

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE.

Dear Sir:

I was much interested in Doctor John M. French's paper on the Thurber Medical Society. He suggests that this body is, perhaps, the oldest local medical society in New England, it having functioned continuously since 1854.

I have in my possession the Constitution and By-Laws of the "Dover Medical Police," which were adopted March 20, 1849. This is our local medical society and has met monthly, at least ten months in the year, since that date. The word "Police" is used in an old sense as a governing body. The qualifications of the good physician are plainly set forth. If one could attain unto them he would need nothing but a pair of wings to enable him to enter the King-

dom of Heaven. The poor are to be our especial charge. They are quoted as being "our best patients, since God is their paymaster;" and we are sternly reminded that "the characteristical beneficence of the profession is inconsistent with sordid views and avaricious rapacity." One would hesitate to bring down such an avalanche upon his head by neglecting the poor.

A fee table is attached. The highest fee is $25, "for trepanning." For twenty-five cents the doctor of that day would extract anywhere from a pint to a quart of blood from his patient. Think what it would cost now to extract a like amount in one of our modern operating rooms!

May I say in passing, that the records of our County Medical Society, dating from 1808, are kept in the city vaults for protection.

Very truly yours,
LOUIS W. FLANDERS.

Dover, N. H., Nov. 2, 1928.

RECENT DEATHS

SWEENEY—DR. ARTHUR AMBROSE SWEENEY, formerly of Lawrence, has died at St. Paul, Minnesota. He was a graduate of St. John College, New York, and of Harvard Medical School in the class of 1886. He settled in Lawrence and joined the state medical society, but moved to St. Paul in two years, where he practised neurology and was a member of the Minnesota State Board of Health. In the University of Minnesota he was professor of medical jurisprudence.

COLES—DR. DAVID SMALLEY COLES, of Wakefield, a graduate of Boston University School of Medicine in 1887, died at the Melrose Hospital November 16, 1928, as the result of injuries received when his buggy was struck by an automobile the previous day. He was 86 years old and still in active practice.

Dr. Coles held the degree of A.M. and was formerly a Methodist minister in Wakefield. A native of New Jersey, he was graduated at Princeton College in 1871 and four years after received the degree of A.M. there. Later he studied theology at Boston University and then after a pastorate of 15 years he turned to medicine.

McGILLICUDDY—DR. JOHN TIMOTHY MCGILLICUDDY, a Fellow of the Massachusetts Medical Society, died at his home in Worcester, November 14, 1928, at the age of 61, after a comparatively short illness.

He was a native of Worcester, born in 1867, a graduate of Holy Cross College with the degree of A. M. in 1913 and of the College of Physicians and Surgeons, Columbia, New York, in 1892. During the World War he served at Camp Devens as a captain in the Medical Corps. Dr. McGillicuddy practised as an eye, ear, nose and throat specialist and was a member of the staff of St. Vincent Hospital. He is survived by his wife, two sons and a brother.

NEWS ITEM

THE HOMBERG INFIRMARY—The Richard Homberg Memorial Infirmary at the Massachusetts Institute of Technology was formally dedicated November 13, 1928.

Dr. Haven Emerson, Professor of Public Health of Columbia University, gave the dedicatory address.

This addition has been made possible by a gift from the family of Richard Homberg 23 who died in that year.

William Rosenwald made the presentation speech. Dr. George W. Moore, Medical Director of the Institute, gave an interesting address. Dr. Allan W. Rowe, a member of the construction committee of the Infirmary, made appropriate remarks.

NOTICES

CORRECTION NOTICE

Under the heading Boston Medical Library (Medical Education in Colonial Times) page 340 in our JOURNAL of August 16, 1928 the statement was made that Harvard College was founded in 1638. It has been brought to our attention that this is incorrect. Harvard University was founded October 28, 1636.

EXAMINATIONS OF THE AMERICAN BOARD OF OTOLARYNGOLOGY

The American Board of Otolaryngology held an examination in New York City, October 11. One hundred and thirty applicants were examined—one hunded and thirteen were passed.

An examination was held in St. Louis, October 15. Seventy-nine were examined—sixty-eight were passed.

The Board will hold an examination in Portland, Oregon, Monday, July 8, 1929, during the session of the American Medical Association, and in Philadelphia in October preceding the American Academy meeting in Atlantic City.

Those desiring information relative to the above will please communicate with Dr. W. P. Wherry, Secretary, Board of Otolaryngology, 1500 Medical Arts Building, Omaha, Nebraska.

H. P. MOSHER, *President.*

CERTAIN CHANGES IN THE UNITED STATES PUBLIC HEALTH SERVICE AFFECTING NEW ENGLAND

Assistant Sanitary Engineer F. J. Moss. Directed to proceed on Nov. 13, 1928, from Chicago, Ill., to Derby, Conn., and return, in connection with field investigations of milk. Nov. 8, 1928.

Surgeon G. W. McCoy. Directed to proceed on Nov. 19, 1928, from Washington, D. C., to Marietta, Pa.; Boston, Mass.; Buffalo, N. Y., and Toronto, Can., and return, to inspect certain laboratories. Nov. 12, 1928.

Surgeon Ralph E. Porter. Relieved from further duty at Boston, Mass., Nov. 15, 1928, and assigned to duty at the U. S. Public Health Service Relief Station, Philadelphia, Pa. Nov. 12, 1928.

REPORTS AND NOTICES OF MEETINGS

MEETING OF THE MASSACHUSETTS CENTRAL HEALTH COUNCIL

Approximately two hundred physicians, nurses, and other health workers attended the meetings of the Massachusetts Central Health Council and its Constituent Organizations at Hotel Bancroft in Worcester on Wednesday, October 31, 1928.

The opening session was under the auspices of the Massachusetts Association of Boards of Health, which transferred its usual quarterly luncheon meeting from Boston to Worcester to meet with the other Council organizations. Mr. John J. McGrath, Agent of the Board of Health of Salem and President of the Association, presided.

The speaker of the day was Dr. Donald B. Armstrong, Assistant Secretary of the Metropolitan Life Insurance Company of New York. Dr. Armstrong's subject was "Private Health Agencies and Public Health Work". The speaker outlined in general the accepted functions of the voluntary agencies, which include, carrying out certain phases of demonstration, certain phases of health education and the transfer of such work at the proper time to the official health agencies. Private associations have begun many useful lines of work in combating and preventing disease. Researches like those of the Rockefeller Institute could not be initiated with public funds and private enterprise has been useful in determining values and limitations. Health education is not really self-limiting, and is likely to have continuing opportunities not only towards promotion of health, but in establishing a public opinion that will support the continuance with public funds. This transfer should come when the private agency has shown the possibilities and the public health authorities are willing to assure proper support.

In tuberculosis the initial stimulus twenty or thirty years ago was private and most of the research has been carried out by private organizations. The prime problem is to get for public service adequate trained leadership. And here the speaker emphasized the need of health education of the people.

In answer to the general proposition how the health officer is to utilize the private agency, Dr. Armstrong noted the value of the work of the private agency, and said that the health officer should make use of it —that there should be co-öperation. It is a mistake for the official agencies to ignore the private ones and at the same time, the latter should not assume the position of "making a better shoe than the shoemaker."

Dr. Francis P. Denny, Health Officer of Brookline, led the discussion of Dr. Armstrong's paper. Dr. Denny found little to disagree with in what Dr. Armstrong had said. He took up the general subject of nursing, and mentioned a tendency towards turning all the nursing work o er to private agencies. He spoke of the overlapping of agencies, noting that sometimes a number of different nurses visit the same family. The usual suggestion is generalized nursing, but while that might do for small districts it is too much to expect universal knowledge in the same individual.

Following the luncheon meeting a joint meeting of the Northern and Southern Worcester County Health Associations of the Massachusetts Tuberculosis League was held. Dr. Roy J. Ward, President of the Southern Worcester County Health Association, welcomed the delegates of the two districts.

The subject for discussion was "Present Day Problems in Community Health Organizations". Dr. Charles F. Wilinsky, Superintendent of the Beth Israel Hospital and formerly Director of the Division of Child Hygiene of the Boston Health Department, made the principal address.

Dr. Wilinsky said, "There are two outstanding problems in the health field today—the problem of organization and the problem of programs. In the field of organization there is the ever-present question of the place of the volunteer associations with respect to the official health agencies.

"One well-defined principle which has been worked out through experience is that the private organization unhampered by departmental and municipal restrictions is in a position to initiate, experiment, and demonstrate. When a piece of work has been proven to be successful and when the conditions are right, the volunteer association should turn it over to the public health agency. This principle is augmented by another, namely, that after a piece of work has been turned over by the volunteer association it should continue its interest in the project and assist the municipal authorities in maintaining the standards which were established during the formative period of the project.

An excellent example of these two principles was the work of the Baby Hygiene Association of Boston, which inaugurated the Well-Baby Clinics in Boston and carried them on during a demonstration period. When the need of these clinics was demonstrated and the method employed was found to be successful the volunteer association assisted the Health Department in securing public funds for continuing the work and after they were taken over by the City continued to exercise an unofficial but salutary interest in them.

"The Health Units of Boston are also an excellent example of intelligent team play in the promotion of public health. After the Health Centres are opened the volunteer health and welfare associations of the locality in which they are situated are invited to join with the official agencies in improving the quality of the work done in the districts.

"Another outstanding problem in our field is the extension of health education with particular application to infant mortality, maternal mortality, and tuberculosis mortality. The pre-school child also presents problems of an important kind calling for special skill to reach the parents in their homes and ground them in the knowledge which should be communicated to the child about the care of its health in the early impressionable years. There is abundant scientific knowledge available which, if applied, would materially assist in the reduction of mortality and morbidity from preventable causes."

Dr. Edward A. Lane, District Health Officer of the State Department of Public Health, spoke on the essentials of health maintenance at summer health camps. Dr. Lane said in part, "The Camp movement began in New Hampshire in 1881. Each year the number of camps has grown and it is estimated that there were approximately 15,000 camps in this country last summer at which children were cared for either for health or recreational purposes or both.

"The attention of the State Department of Health was drawn to the camps a number of years ago and it has furnished service to camps desiring it with respect to examination of water, sewage disposal, and health supervision of children. The Department is desirous of seeing more preventive work done at the camps and more diligent supervision exercised in relation to children who may become ill.

"A plan which would meet with the approval of the Department with respect to health measures at camps would include the following: Physical examination by a private physician of each child going to camp,

examination of all children on arrival at camp to detect evidence of communicable diseases, vaccination, inoculation for scarlet fever, and immunization against diphtheria."

Dr. Lane also urged medical examination of all food handlers. He also recommended that children be cared for in small dormitory units accommodating six or eight children and a councillor.

Dr. Lane maintained that milk for the camps should be obtained from a dealer handling a pasteurized supply or from tuberculin tested cows. With respect to medical examination he recommended that in a camp of fifty or less children arrangements should be made with two local physicians, one of whom would agree to visit the camp each day.

He also recommended a medical examination to be given at the close of the camps as a check-up on the benefits derived from camp life and to avoid the possibility of children carrying home contagious diseases which might have developed in the last few days of the camp period.

Dr. Sumner H. Remick, Director of the Division of Tuberculosis of the State Department of Health, spoke on the present status of tuberculosis work in Massachusetts. Dr. Remick stated that in 1897 there were 220 deaths per 100,000 of the population in the Commonwealth. In 1927 this rate had been reduced to 63.8. If the rate had persisted there would have been approximately 6,000 deaths in the Commonwealth last year instead of the 2,792 which were recorded.

He continued that the most difficult period of the tuberculosis fight lies ahead of us. The present outstanding need in tuberculosis work is that of early diagnosis. The Department is glad to furnish medical examinations for tuberculosis clinics. He stated that it is planned to have an early clinic in Milford, Worcester County, under the auspices of the Southern Worcester County Health Association, the medical and nursing service to be furnished by the State Department.

Dr. Remick explained that under recent legislation the County Commissioners are authorized to appropriate annually $3,000 for the maintenance of children at preventoria or summer health camps in Counties where such camps are not conducted in conjunction with County Sanatoria. The legislation provides that Counties cannot make these appropriations unless the camps are approved by the Department of Health. Dr. Remick suggested that a conference be called with representatives of the Department, the Massachusetts Tuberculosis League and its Affiliated Organizations to draw up a set of minimum requirements which will be applied to camps applying to County Commissioners for public funds.

Following Dr. Remick's address a business meeting was held at which details of the 1928 Christmas Seal Sale were discussed. Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League, presided. Mrs. Moore of Southern Worcester County Health Association outlined the plans for the campaign in the Worcester South District. Mrs. McGee, Executive Secretary of the Northern Worcester County Health Association, told of the plan of campaign in her territory. Mr. Frederic Edwards, Executive Secretary of the Hampden County Tuberculosis and Public Health Association, explained the detail work of the Hampden County Seal Sale organization. Following this there was a general discussion by the delegates present.

A joint meeting also was held of the Massachusetts Dental Hygiene Society and the Worcester Dental Society. Dr. Edward F. Sullivan gave a brief history of the council.

The paper of the afternoon was that of Dr. E. Melville Quinby entitled, "Dentistry as a Part of General Health Service". The speaker outlined his own experience and suggested that it was not widely different from that of other dentists, namely that for years he worked mechanically at the filling and care of the tooth itself. He believes that this is only part of the real field of the dentist and presented a plan for affiliating it with public health service. The plan is founded on the necessity of considering at least three fields in the care of the teeth, the tooth itself, the surrounding structure and nutrition. There has been improvement in methods so that an earlier five per cent. of attention to the supporting tissues has now become about fifty per cent. He made a strong plea for the training of students to consider the different factors and co-öperate as much as possible with the medical profession. There are things that the dentist should do for the expectant mother and things to do for the child, and these in addition to what has usually been considered within the field of the dentist. It is important to educate prospective and practising dentists in the various needs of the situation with considerable emphasis on nutrition. Dr. Quinby illustrated his paper by means of many lantern slides.

In the evening the Central Health Council dinner was held with approximately one hundred present. Dr. Henry B. Elkind, President of the Council, presided. Dr. Thomas F. Kenney, Health Officer of Worcester, made an address of welcome on behalf of the Worcester Health Department and the medical profession of Worcester.

The subject for discussion was "Desirable Relations Between the Medical Profession and Public Clinics". Dr. Bigelow was the first speaker. He raised the question as to the causes for the general disaffection between public health officials, volunteer organizations, and the public clinics today.

He stated that the cost of medical service and the economic burden of extensive hospitalization present serious problems to those who have need of such service. There are two schools of thought on the subject—one group maintaining that the clinic problem would be solved if we had more free service and cheaper private service. This would be impossible because it would be an injustice to the medical profession placing it on an unsound economic basis.

The other group maintain that free service should be limited to paupers—those who have no money. This raises the question of who is a pauper.

Dr. Bigelow continued, "The establishment of a free clinic service for cancer at Pondville Hospital has raised the question as to whether free clinics for heart disease and similar groups should not be furnished by the State.

"It has been the experience in clinics that have been operating a number of years that 95 per cent. of patients attending them stop coming before they are discharged.

"The experience in 1927 with the Cancer Campaign indicated that many new patients went to private physicians. A questionnaire was sent out by the

Department which brought replies from 1,500 doctors. An analysis of the statements of the physicians disclosed that for each patient that went to the clinics there were 22 who consulted their own physicians."

Dr. Bigelow concluded, "If the various organizations that make up the Massachusetts Central Health Council, all of which are interested in some aspect of this problem, will acquaint themselves with the problems of each of the other groups, we may agree on a few general working principles so that in the future less of our energy will be used in heat and more in accomplishments."

Dr. Alec N. Thomson, Secretary of the Public Health Committee of the Medical Society of the County of Kings, Brooklyn, New York, said in part, "As I understand it, I am in Worcester to help you Massachusetts enthusiasts for health to get together to formulate a platform of relations that will be workable.

"Better health is the subject of so much propaganda. Better health is given so many titles, whether it be community health, personal hygiene, mass sanitation, or so-called positive health. We are likely to lose sight of the individual as a human being when we think in the all-inclusive term 'preventive medicine'.

"I believe we should realize that we are struggling for progressive medicine, which must include curative medicine, preventive medicine and health education.

"The national, state and county medical societies have done a wonderfully effective job in improving medical practice and procedure. This applies to both preventive and curative medicine. For this they have not received or asked much credit.

"Organized medicine has not until recently—and even now by no means adequately—devoted enough time or effort in participating as an organized group in community work. Call it community health work, welfare work, or anything you please.

"For this lack of participation organized medicine is not entirely to blame. Often it is busy with its emergency work which is still its primary function. Too often it has not been asked. Individual physicians have been consulted, it is true, but the group to which the individual physician belongs has been overlooked, and, therefore, responsibility has not been placed upon the group through its designated representatives. Why has this occurred? Perhaps we find at least some of the answer in a dislike on the part of the health worker to the medical askers of questions, and perhaps again we find part of the difficulty in the fact that the organized medical profession is unstaffed. It depends for its activities upon its membership working as committees. Organized medicine usually has functioned without a flock of stenographers under the command of a high-powered executive secretary, ready to confer, ready to arrange committee work, ready to keep minutes, prepare resolutions and do the many things that many of us do to earn our daily bread.

"The State of New York has its problem in this regard. It is probably no different from yours in Massachusetts. Until very recently the State Society was managed without paid executive personnel in its community relations activity; now it has something that resembles an executive office organization. Progress is being made. Better committee work results than used to be the case when the committees were without any service except the comittee-man's own fountain pen and some stationery provided by his organization.

"Then again, no standardized method of procedure can be laid down. Communities vary, whether they be villages, towns, cities or counties.

"I suppose you want to know about Kings County. How we do it in Brooklyn, in other words, maybe you would like to know what my job is. First, I am on full-time work and part-time pay. Most health workers are.

"Second, we have a Public Health Committee made up of doctors representing all branches and thoughts and jobs in medicine—A surgeon, an internist, a pediatrician, an industrial physician, a woman physician; and other members representing obstetrics, gynecology, venereal disease, tuberculosis and the like. In addition there is a representative of the health department, of the hospital superintendent group, with your humble servant as secretary.

"Third, we are able, by virtue of organization, to participate in community activities if asked and when asked.

"We answer correspondence, or try to—We answer questions if we can. Most of our correspondence and replies to inquiries are based upon committee consideration of individual problems or established general policies.

"Let me illustrate. Time is too short to give you many details. You will have to take my word for it that our best result is the goal we strive for in all our activities. Our best piece of work has been with the Visiting Nurse Association. It originated with this Association. They had their problems with doctors who did absurd things or who did unethical or illegal things. We had our problems with nurses who practiced medicine. These troubles had to be ironed out. The Directress of the Nurses' Association and the Secretary of the Public Health Committee talked it over. The Visiting Nurse Association wrote a letter to the County Society asking the medical profession to write the standing orders for the nurses. The County Society appointed a special committee so to do. The committee soon discovered that it needed the advice and guidance of the nursing group. It asked for it. It got it. Standing orders were prepared and issued as corrected by the special committee and approved by the Council of the Society. Every doctor and every visiting nurse received a copy of the standing orders. The Visiting Nurse Association paid for the printing and distribution. The County Society designated the Public Health Committee as the liaison committee with the nursing organization and the nursing organization considers the County Society as its medical advisory body.

"Similar co-öperation is in effect with the Maternity Center Association and we have a joint Public Health Committee with the Chamber of Commerce. This is called the Brooklyn Health Council. To it problems presented to the Public Health Committee of either organization may be referred when they overlap the sphere of the receiving organization.

"Would it not be a step towards the solution if the three major divisions of health workers were to line up somewhat in this manner:

"The Medical Society to be ready and willing to contribute that thing which no other group possesses or can buy—namely, professional guidance based on

its daily practical experience with the run of the mine of human beings.

"The official agencies to use their authority where power is needed and be ready to pay for the service rendered.

"The unofficial agencies to augment but not supplant the activities of both groups—and last but not by any means least—to strive to work themselves out of each and every job they undertake.

"In approaching this problem of relationships let's be practical. Let's not fool ourselves with averages. It is silly to talk about the maternity cases costing an average of $500 when we know that the fond father pays from nothing up to $1,000. It gets us nowhere to talk about the need for clinics because the national bill for medical services is many millions of dollars, figured on the basis of so many doctors at $3,000 per annum, and more nurses at $1,500 per annum and chiropractors at $2,000 per annum, and other things at other figures which, when multiplied, added and divided come out with an annual per capita of $20 paid and $60 needed. Such reasoning is no adequate evidence of the need for clinics, or any other type of health service and yet it is the type of reasoning we hear. Sentiment—an overwhelming desire to be our brother's keeper or prohibitor seems to have been proven not peculiarly effective as an American procedure and yet we are motivated by it in our health work.

"We cannot in the words of Morris Fishbein 'afford to kill the incentive for research, initiative, or the desire to progress as an individual'. For if you do 'the physician becomes merely a salesman of medicine, an inspector of gonorrhea, or a slicer of adenoids. Until we become a nation of robots with standardized parts we are hardly likely to have any need of purely standardized practice'.

"Health workers of all groups can afford to consult the organized medical profession prior to the elaboration of plans. Even though the end result of the first conference is not the immediate set-up of the plan, continuation of the effort will result in improvement of programs that are not inaugurated—and thus, through not succeeding the first time, and by trying and trying again, we eventually will evolve something that will be a success.

"Discussion will help in the solution of this relationship problem but it cannot all be discussed tonight. It is not all a question of words, of books, nor of the opinion of hand-picked leaders. Anything good cannot be rushed through in mass meetings heralded by much publicity. It is largely a matter for thinking through and this is something that can be done around a table and in the locality where the work is to be done. Our aim should be to strive to get action through adequate participation which will mean real co-öperative endeavor."

The addresses of Dr. Bigelow and Dr. Thomson were discussed by Miss Laura Draper, R.N., of the Massachusetts State Nurses Association; Miss Gertrude Peabody of the Massachusetts Association of Directors of Public Health Nursing; Dr. William A. Bryan, Superintendent of Worcester State Hospital; Dr. Charles F. Wilinsky, Superintendent of Beth Israel Hospital; Dr. LeRoy M. F. Miner, Dean of Harvard Dental School, and Mr. Frank E. Wing, Director of the Boston Dispensary.

The following resolution was unanimously adopted:

That a Committee of seven in addition to the President and Secretary of the Council shall be appointed by the President to study the problem of the desirable relations between public health agencies, official and voluntary, and the organized medical profession; this Committee to report to the Council with recommendations at its meeting in May, 1929.

PONDVILLE STATE HOSPITAL

NOVEMBER 14, 1928

Program

11 A. M.-12 Noon. The treatment of your patients at Pondville Hospital, Dr. E. L. Daland. The use of radium in the treatment of cancer, Dr. I. Gerber. The use of electrosurgery in the treatment of cancer, Dr. G. W. Taylor. Breast cancer, Dr. E. L. Daland.

12 Noon-1 P. M. Conference and question period, Dr. George H. Bigelow and Dr. H. Lombard.

1 P. M. Lunch.

1:45-2 P. M. Electrosurgical operation (Fisher), Dr. G. W. Taylor.

2-2:45 P. M. Ward visit.—Bone tumors, breast cancer and electrosurgical cases.

2:45-3:15 P. M. X-ray treatment demonstration, Dr. I. Gerber. Electrocoagulation advanced cancer of breast, Dr. E. L. Daland.

3:15 P. M. Biopsies and frozen sections, Dr. S. Warren.

3:30 P. M. Cancer of female genitalia, Dr. J. V. Meigs.

3:45 P. M. Malignant lymphomas, Dr. Henry Jackson.

All but two of the State Aided Cancer Clinics were represented. Dr. Bigelow will favor the JOURNAL by sending in the papers for publication in a later issue.

A MEETING AT WHICH MENTAL HYGIENE AND SOCIAL NEEDS WERE DISCUSSED

On the evening of November 1 a dinner-meeting was held under the auspices of the Massachusetts Society for Mental Hygiene and the Worcester State Hospital. It was one of a group of meetings held in conjunction with a meeting of the Massachusetts Central Health Council.

Dr. C. Macfie Campbell, President of the Massachusetts Society for Mental Hygiene and Director of the Boston Psychopathic Hospital, discussed "Mental Hygiene and Social Needs," pointing out very succinctly the various social problems of the day and how mental hygiene can be of assistance in dealing with them. Mr. David W. Armstrong, Director of the Worcester Boys' Club, discussed "The Relation of Mental Hygiene to Boys' Club Work" and his most interesting address showed quite definitely what a good piece of mental hygiene good boys' club work is. Dr. S. Spafford Ackerly, Director of the Worcester Child Guidance Clinic at Memorial Hospital, told how the Clinic operates, the kind of cases it deals with, and some of the results.

THE 1928 MEETING OF THE NEW ENGLAND SURGICAL SOCIETY

The annual meeting of the New England Surgical Society was held in New Haven, Connecticut, Friday and Saturday, November 9 and 10.

The exercises were opened promptly at nine o'clock on the first day by the President, who introduced Dr. George Blumer of New Haven, who gave an in-

structive description of the important internal diseases of the trunk which may present surgical problems. He was followed by Dr. E. R. Lampson, who referred to many serious cases in his surgical practice from which he drew illustrations and conclusions.

Dr. William F. Verdi of New Haven conducted a dry clinic in which many cases of the results of operations of carcinoma of the intestinal tract were shown, the larger number being those of the rectum for which good results were obtained. The discussion which followed, in which many participated, recorded the experience of many of the members and expressed cordial appreciation of the work of Dr. Verdi.

After the dry clinic Dr. Verdi entertained the assembly in the operating room, where he performed a gastrectomy for cancer of the lower portion of the stomach and the removal of an ovarian cyst with a twisted pedicle which had presented difficult diagnostic features before operation. At the conclusion of the operative demonstrations Dr. Verdi entertained the Society at a luncheon in his home and demonstrated that a skillful surgeon can also be a cordial and delightful host.

In the afternoon the literary program was conducted at the New Haven Hospital as follows:

Rupture of a Pregnancy in a Bicornate Uterus. Dr. P. E. Truesdale, Fall River, Mass. Discussion: Dr. A. T. Jones, Providence, R. I.

The Relation of Healing Wounds to Suture Material Employed. Dr. S. C. Harvey, New Haven, Conn. Discussion: Dr. A. G. Rice, Springfield, Mass., and Ernest L. Hunt, Worcester.

Pelvic Exclusion for Visceroptosis. Dr. G. A. Moore, Brockton, Mass. Discussion: George W. Brewster, Boston, and George C. Wilkins, Manchester, N. H.

Operative Treatment of Varicose Veins and Ulcers. Dr. John Homans, Boston. Discussion: Dr. A. M. Rowley, Hartford, Conn., and John M. Allen, St. Johnsbury, Vt.

Non-Tubercular Spondylitis. Dr. Dudley Carleton, Springfield, Mass. Discussion: Dr. G. W. Hawley, Bridgeport, Conn., and Dr. N. Allison, Boston.

Reflux of Duodenal Contents Through the Common Bile Duct. Dr. Lincoln Davis, Boston. Discussion: Dr. David Cheever, Boston.

Other animated and instructive discussions from the floor followed the reading of each paper.

The evening of the first day was given over to an elaborate dinner at the Taft Hotel, where during the gastronomic pleasures the President under the inspiration of an orchestra led in the singing of popular songs. The post prandial entertainment was furnished by the annual oration by the President, in which he took up the important features of the education of nurses in its application to the duties of the members of the nursing profession. He was followed by a well thought out and constructive address by Professor Winslow, who emphasized the wisdom and perhaps the necessity of co-öperating with those trained in the science and art of pedagogy in this field rather than exhibit a spirit of criticism of the product of training schools and the present attitude of nurses. He felt that although doctors and the laity have ideals of nursing service the experienced teachers know better how to develop the latent abilities of the pupils.

Dr. James S. Stone discussed the attitude of the medical profession toward the present condition in the nursing field giving pertinent illustrations of what is wanted of nurses and some of the objectionable features of the situation at the present time.

Dr. David Cheever of Boston, Dr. G. C. Wilkins of Manchester, N. H., and Dr. F. B. Sweet of Springfield discussed the papers. There were many present who were ready to add accounts of very interesting experiences and submit suggestions but it was midnight and the need for rest in preparation for the exercises of the next day made it imperative to postpone further discussion.

On the second day the literary program was continued at the New Haven Hospital at nine o'clock, where a most interesting and instructive symposium on pelvic surgery took place. Dr. Lyman Allen of Burlington, Vermont, covered the general surgical aspects of the pelvis. Dr. William P. Graves of the Brookline Free Hospital for Women, Boston, in a most carefully written paper, went into more intimate details of the disorders of the female pelvis, while Dr. Wilder Tileston, Professor of Medicine at Yale Medical School, covered the general medical aspects of the field. More than a dozen men discussed the papers from the floor and the morning was most enjoyable.

Immediately thereafter the Executive Session of the Society was held. The President, Dr. Robert B. Osgood, presided and various matters of business were attended to, among others, the adoption of a "shingle" of very attractive design, being a reproduction of the border of the title page of the first edition of the works of Ambroise Paré. This had been discovered and adapted to its new purpose by Dr. Osgood. The following officers were elected for the ensuing year:

President: Philemon E. Truesdale, M.D., Fall River, Mass.

Vice-President: Willis E. Hartshorn, M.D., New Haven, Conn.

Secretary: John M. Birnie, M.D., Springfield, Mass.

Treasurer: Peer P. Johnson, M.D., Beverly, Mass.

Recorder: Walter G. Phippen, M.D., Salem, Mass.

Executive Committee: Officers of the Society and Lyman Allen, M.D., James B. Woodman, M.D., William H. Bradford, M.D., David Cheever, M.D., Arthur T. Jones, M.D.

It was announced that the next meeting of the Society would be held in Providence and Fall River. The following new members were elected:

Dr. Emery M. Fitch, Claremont, N. H.
Dr. Thomas N. Hepburn, Hartford, Conn.
Dr. Ezra A. Jones, Manchester, N. H.
Dr. Theodore S. Moise, New Haven, Conn.
Dr. James W. Sever, Boston, Mass.
Dr. Winford O. Wilder, Springfield, Mass.

Following the Executive Session adjournment was made to the Operating Building, where the following operations were performed and the various laboratories were thrown open for inspection.

OPERATIVE CLINIC

New Haven Hospital
Nov. 10, 1928
(4th Floor—Farnam Memorial Building)

Schedule of Operations

Room No. 1—Exploratory Craniotomy for Brain Tumor, Dr. Harvey.

Room No. 2—Hystero-myomectomy, Dr. Morse.

Room No. 3—Removal of Calculus of Urinary Bladder, Dr. Deming.

Room No. 4—Gastro-jejunostomy—Transverse Jejunal Incision, Dr. Moise.

The Laboratories of Surgery, 2nd Floor.

The laboratories of Obstetrics and Gynecology, 3rd floor, were open for inspection.

The departments of Physical Therapy and Cystoscopy in the Basement of Farnam Memorial Building were also open for inspection.

Luncheon was served in the Surgical Seminar Room, 250, 2nd floor, at 12:30 P. M.

The following exhibits were on view in the laboratories of Surgery, 2nd floor:

Room 239—Pathological Specimens, Dr. H. Scoville.

Room 239—Drawings and Specimens Illustrating Method for Gastro-enterostomy with Transverse Jejunal Incision, Dr. T. S. Moise.

Room 239—The Effect of High Protein Diet on the Kidneys of White Rats, Dr. T. S. Moise.

Room 241—Pathology of the Eye, Dr. Eugene Blake and Dr. A. M. Yudkin.

Room 247—Animal Operating Room.

Room 262—Moulages, Carl Kollner.

Room 264—Urological Pathology, Dr. C. L. Deming.

Room 266—Corrosion Specimens of Injected Kidneys, Dr. C. L. Deming.

Room 268—Photographs and Specimens Illustrating Gynecological Pathology. Dr. A. H. Morse and Dr. H. Thoms.

Room 268—Experimental Atelectasis, Dr. F. W. Roberts.

Room 268—Experimental Cirrhosis of Liver, Dr. J. Hillsman and Dr. H. M. Zimmerman.

After the close of the Clinics, lunch was served at the invitation of the New Haven Hospital. The Yale Athletic Association, with a great deal of generosity, gave complimentary tickets to the Yale-Maryland Football Game, to each member of the Society who cared to use them and many members took advantage of the invitation.

The two days were most enjoyably spent and the thanks of the Society are due to Dr. Hartshorn and his Committee, Dr. Verdi and his associates at the St. Raphael Hospital and to Dr. Harvey and his associates at the New Haven Hospital, for their hospitality.

THE MASSACHUSETTS GENERAL HOSPITAL STAFF MEETING

A Staff meeting was held at the Massachusetts General Hospital on Thursday evening, November 8.

The meeting was opened by the usual demonstration of cases. Dr. C. L. Swan of the West Surgical Service presented a 55-year old patient suffering from carcinoma of the transverse colon causing partial obstruction. Nine years previous, this patient had had a resection of the right side of the colon for carcinoma, and it was then noted that around the carcinomatous growth there were several polyps; the patient had had no further trouble since that time and now entered with another carcinomatous growth in the colon. Dr. D. F. Jones, in discussion, commented on the importance of polyposis as an etiological factor in carcinoma of the colon and rectum.

The second case, a boy with malignant lymphoblastoma, was presented by Dr. James Grazier of the West Medical Service. Four years ago the boy had entered the Hospital with enormous swellings of the glands of the neck, which had disappeared under x-ray treatment; during the ensuing four years he had re-entered the Hospital from time to time for x-ray treatment of various regional enlargements of the lymph glands.

The regular program of the evening was opened by Dr. R. B. Greenough, who gave a short talk on the purposes and organization of the Tumor Clinic. Dr. Lincoln Davis, following this, gave a brief discussion of the treatment of cancer of the cervix. He said that the feeling over the country at the present time that radium gave just as good results as surgery, without tne mortality or unfortunate complications, was almost unanimous; that his experience with radium tended to bear this out; but that a few more years would have to elapse before final figures would be available at the Tumor Clinic.

Dr. J. V. Meigs spoke next, on the use of x-ray after operation for cancer of the ovary, his figures seeming to show that its use was decidedly beneficial. He presented 2 patients, 3 or 4 years after operation for carcinoma of the ovary, where it had not been possible to remove the entire growth at the time of operation. These patients had had extensive x-ray treatment following operation and were now alive and well with no sign of recurrence.

Drs. E. M. Daland, R. B. Greenough and G. W. Holmes then spoke on the subject of cancer of the breast. Dr. Daland spoke briefly of the most approved technique of operations for these cases, illustrating his talk with lantern slides; he also gave figures showing the life expectation of patients with carcinoma of the breast. Dr. Greenough spoke of the classification of the types of carcinoma of the breast and stated that it should be possible on the basis of early diagnosis and radical operation to cure 75% of the cancers of the breast, whereas we were now getting only 15% cures because of late diagnosis; he emphasized the importance of making the diagnosis before there was any axillary involvement. Dr. Holmes, in discussing the x-ray treatment of cancer of the breast, said the figures now available seemed to show that the post-operative use of x-ray, except in the presence of obvious recurrences, was not beneficial; but that the series of cases at present on record was not large enough to give definite evidence on this point. He stated that the field of greatest usefulness was in ameliorating the symptoms of inoperable cancer, usually preventing the extensive ulceration which formerly was such a distressing complication. He said that in general where the growth could not be removed completely, the most satisfactory results from x-ray could be obtained if no attempt at partial removal were made.

Dr. C. C. Simmons spoke on the subject of osteogenetic sarcoma. He gave a brief classification of the types of bone sarcoma and outlined the treatment and prognosis of the different types. His talk was illustrated with beautifully prepared lantern slides showing numerous pathological specimens.

Dr. R. C. Dresser, speaking on the subject of bone involvement in lymphoblastoma, said that this was formerly believed to occur very rarely; but that the more frequent x-rays of the bones in this disease that have been taken recently had shown that bone involvement was not an unusual occurrence. He showed a number of x-ray plates illustrating this point.

The next Staff meeting will be held on Thursday, December 13. Dr. Arlie V. Bock will speak on "Some Aspects of the Physiology of Muscular Exercise, including a Study of Clarence DeMar, with Clinical Application."

SOCIETY MEETINGS

Combined Meetings of the Boston Medical Library, the Suffolk District Medical Society, the Middlesex South District Medical Society and the Norfolk District Medical Society

December 19—Surgical Section. Symposium on Stomach Surgery. "Operative Procedures: Indications and Results," Dr. R. H. Miller; "Selection and Management of Patients for Gastric Surgery," Dr. H. M. Clute; "Acute Perforations of Stomach and Duodenum," Dr. W. R. Morrison; "Results of a Series of Stomach Operations," Dr. E. S. Emery, Jr. Discussion by Doctors David Cheever, Edward P. Richardson, Frank H. Lahey and I. J. Walker.

January 30, 1929—General meeting in association with Boston Medical Library. "Heredity," Professor George H. Parker, Harvard University.

February 27, 1929—Medical Section. "The Newer Knowledge of Nutriment," Dr. Lafayette B. Mendel (exact title to be submitted later), Yale University Medical School.

March 27, 1929—Meeting in association with Middlesex South District Medical Society. Clinical and Experimental Studies of Obstructing Jaundice and Its Complications. Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

The medical profession is cordially invited to attend all these meetings.

November 26—Berkshire County Medical Society. Detailed notice appears on page 965, issue of November 8.

November 26-28—The National Society for the Prevention of Blindness. For detailed notice see page 1016, issue of November 15.

December 13—Massachusetts General Hospital Staff Meeting. See detailed notice above.

DISTRICT MEDICAL SOCIETIES

Barnstable District Medical Society

Schedule of Meetings: February 7, 1929, May 2, 1929.

Bristol North District Medical Society

April 18, 1929—Spring meeting.

Essex North District Medical Society

January 2, 1929 (Wednesday)—Semi-annual meeting at Haverhill, at 12:30 P. M.

May 1, 1929 (Wednesday)—Annual meeting at Lawrence, at 12:30 P. M.

May 2, 1929 (Thursday)—Censors meet at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. (Tel. 3430.)

Essex South District Medical Society

December 5 (Wednesday)—Beverly Hospital. Clinic at 5 P. M. Dinner at 7 P. M. Speaker: Dr. Fred H. Albee, Sc.D., F.A.C.S., Professor of Orthopaedic Surgery, New York Post Graduate Medical School. Subject: Automatic Machinery in Bone Surgery. Discussion by Drs. H. C. Bean of Salem and C. Damsky of Lynn (10 minutes each). Discussion from the floor.

January 2, 1929 (Wednesday)—Hawthorne Hotel, Salem. Dinner at 7 P. M. Symposium on Gall Bladder Disease. Speakers: Dr. Chester Jones, Boston, Diagnosis of Gall Bladder Disease, and Differential Diagnosis in Jaundice. Dr. Paul Butler, Boston, X-ray in Gall Bladder Disease. Dr. Frank Lahey, Boston, Surgery of Gall Bladder.

February 6, 1929 (Wednesday)—Council meeting, Boston.

Fabruary 13, 1929 (Wednesday)—Danvers State Hospital. Clinic at 4 P. M. Supper at 6 P. M. Speaker: Dr. Roger Lee, Boston; subject to be announced later. Discussion from the floor.

March 6, 1929 (Wednesday)—Lynn Hospital. Clinic at 5 P. M. Dinner at 7 P. M. Symposium on Pneumonia. Speakers: Dr. Reginald Fitz, Diagnosis. Dr. Fred Lord, Treatment. Dr. William H. Robie, Heart in Pneumonia. Discussion from the floor.

RALPH E. STONE, M.D., Secretary.

Franklin District Medical Society

Meetings will be held on the second Tuesday of November, January, March and May.

Hampshire District Medical Society

December 12—Address by Dr. Philemon Truesdale.

March 13, 1929—Address by Dr. George E. Gage, Professor of Bacteriology and Physiology at the Massachusetts State College.

Middlesex East District Medical Society

The following schedule of meetings has been arranged for the coming year:

January 16—Wakefield.
March—Reading.
May—Melrose.

Subjects and speakers to be arranged by committees in each city or town.

Middlesex North Medical Society

The winter meeting will be held the last Wednesday in January.

The annual meeting will be held the last Wednesday in April.

Middlesex South District Medical Society

March 27, 1929—Joint meeting with the Suffolk and Norfolk Districts.

April, 1929—Annual meeting. Definite date to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District Medical Society for the 1928-29 Season. The schedule below will be adhered to as strictly as possible. The carrying out of the proposed plan will, of course, depend upon the acceptances of invitations extended to the speakers. Minor changes may be necessary.

January 29—Roxbury Masonic Temple. Subject, Treatment of Varicose Veins by the Injection Method—Dr. E. E. O'Neil. Dr. Homans will open the discussion.

February 25—Roxbury Masonic Temple. Dr. W. R. Ohler. Subject to be announced. Discussion to be opened by Dr. A. A. Hornor.

March 29 — Roxbury Masonic Temple. Subject and speakers to be announced.

May—Annual meeting program to be announced.

The Censors of the Society meet November 1, 1928, and May 9, 1929, at the Roxbury Masonic Temple, Warren Street, Roxbury, at 4 P. M., for the examination of candidates.

Plymouth District Medical Society

January meeting, Thursday, January 17, 1929, at 11 A. M., Brockton Hospital, Brockton, Mass. Speakers: Dr. Michael F. Fallon, Chief of Surgical Staff, St. Vincent Hospital, Worcester, Mass.; Dr. Edw. J. Denning, Chief of Medical Staff, Carney Hospital, Boston, Mass.; subject to be announced later.

March meeting at the Moore Hospital, Brockton, Mass., March 21st, program to be announced later.

April meeting at the Commercial Club, Brockton, April 18th, at 6 P. M. Annual Oration by Dr. Ralph C. McLeod, Orator; dinner.

Suffolk District Medical Society

March 27, 1929—Meeting in association with Middlesex South District Medical Society. "Clinical and Experimental Studies of Obstructive Jaundice and Its Complications," Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

LINCOLN DAVIS, M.D., President.
ARTHUR H. CROSBIE, M.D., Secretary.

Worcester District Medical Society

December 12, 1928—Chamber of Commerce, Worcester. Orthopedic Symposium.

January 9, 1929—Chamber of Commerce, Worcester. Dr. Leon T. LeWald of New York City.

February 13, 1929—Worcester State Hospital. Program to be announced.

March 13, 1929—Worcester City Hospital. Dedication of New Nurses' Home. Speaking program to be announced.

April 10, 1929—Grafton State Hospital. Program to be announced.

May 8, 1929—Annual meeting. Worcester Country Club.

Worcester North District Medical Society

January 22, 1929 (Tuesday)—At Henry Heywood Memorial Hospital, Gardner, by invitation. Program by Staff.

Annual meeting the fourth Tuesday in April.

BOOK REVIEWS

Epilepsy. By WILLIAM G. LENNOX and STANLEY COBB. Medicine Monographs, Volume XIV. Baltimore, The Williams & Wilkins Company, 1928. Pp. 197.

Epilepsy is considered as a symptom and not as a disease, in this comprehensive monograph on the

convulsive state. Much attention is given to the physiological changes in the brain which may effect seizures. The authors point out that attacks may be precipitated by oxygen lack or by alkalosis, and seizures may be prevented by an increased oxygen tension in the tissues and by acidosis, however induced. There are probably other factors involved but, in the author's opinion, the fundamental element in the precipitation of seizures in epilepsy is probably "oxygen lack". An artificial acidosis may be induced by means of a ketogenic diet, a method of treatment which has been particularly successful in children.

The book is a carefully written summary of our knowledge today about epilepsy. Special emphasis has been put upon the physicochemical aspect of the problem. It is completed by an extensive bibliography and index. Such a worthy effort to throw light on the complexed convulsive states deserves the highest praise; the book can be strongly recommended.

Preventive Medicine. By MARK F. BOYD, M.D., M.S., C.P.H., of the International Health Division of the Rockefeller Foundation. Third Edition Revised. W. B. Saunders Company, 1928.

The author states in his Foreword that he has endeavored to "present briefly the salient features of modern preventive medicine." He has done this in a systematic and a concise manner. In a book of 450 pages under the headings of thirty-seven chapters he has dealt with various features of sanitary engineering and most, if not all, the conventional procedures having in view the prevention and control of diseases.

In his Foreword the author says, "The medical profession can play an important rôle in the field of preventive medicine and public health. At present physicians are neglecting their opportunities. If this neglect continues the opportunities will lessen and the field will be taken away from physicians by a changing public sentiment".

Whether this be considered as a prophecy or a threat the book presents to the physician the kind of information that, as a duty to his community, he should have at hand if not in his head.

A book of this sort can be correctly appraised and appreciated by physicians who understand the limits of present knowledge of diseases and their causes. In efforts to present, however, in manual form all the subjects which the author has considered it is probably unavoidable that this book like others of a similar character should appear to a critical layman to be intended to make him believe that preventive medicine had now reached the stage where all that is necessary to prevent disease is a standardized public health organization, a numerous personnel and liberal appropriations.

"*A Text-book of Pharmacology and Therapeutics or the Action of Drugs in Health and Disease.*" By ARTHUR R. CUSHNY, M.A., M.D., LL.D., F.R.S. Ninth Edition—Thoroughly revised by C. W. Edmunds, A.B., M.D., and J. A. Gunn, M. A., M.D., D.Sc. Published by Lea and Febiger, Phila. 1928.

Professor Cushny's memory could hardly be better perpetuated than that his book should continue to be a force in Pharmacologic Literature. To this end Profs. Edmunds and Gunn have dedicated themselves and the result is the ninth edition of this well known text.

Essentially the same arrangement prevails in this edition. The revision has been thorough. The authors have attempted to introduce many of the new drugs, some tried and proven useful and others still in the flux of experiment, but showing signs of promise. Thus there had been included such drugs as the more recent anti-syphilitics, bismuth, stovarsol, Bayer 205, and tryparsamide; ortho-iodoxybenzoic acid (in arthritis) hexylresorcinol, novasurol and ephedrine.

There are a few omissions which the reviewer believes have sufficient practical importance to find their way into such a text. The treatment of poison ivy by the rhus toxicodendron antigen and tincture is of value. In conjunction with the use of novasurol as a diuretic there has sprung up a new importance to ammonium chloride which in larger doses than heretofore used as a powerful diuretic and often obviates the necessity of using the mercurial preparation. The chloride ion in general has proven a potent factor in the control of the symptoms of internal obstruction and gastric tetany. According to the literature many cases of metallic poisoning have been cured or alleviated by sodium thiosulphate. Isacen is a laxative that possesses certain virtues. The observation that the adrenaline effect can be prolonged by massage has been frequently corroborated and found useful. Lastly, the importance of liver and liver extracts in the therapeutics of the pernicious anemia is now well recognized.

If these be classified as errors of omission it is certainly difficult to find errors of commission. The scientific standard initiated by Dr. Cushny has been maintained. To students fresh from their physiology and biochemistry this book makes an excellent stepping stone while to practitioners it is an authoritative reference volume.

Urological Roentgenology. By HUGH H. YOUNG, M.D., and CHARLES A. WATERS, M.D. Annals of Roentgenology, Volume VII. Edited by James T. Case, M.D. Published by Paul B. Hoeber, Inc., New York. 499 pages.

From the wealth of clinical and pathological material at the Brady Urological Institute, Young and Waters have selected a remarkable collection of x-rays to illustrate the pathology of the urinary tract. These x-rays are accompanied by summaries of the histories of their respective cases. In addition to this, the pathology, symptomatology and to some extent the treatment of each condition is discussed in the text. Thus a great deal of information, aside from that pertaining to the roentgenology of the urinary tract, is contained in this volume VII of the Annals of Roentgenology.

It is amazing to see with what ingenuity Young and Waters have applied roentgenology to the diagnosis of diseases of the urinary tract. The x-rays can be made to yield additional facts about almost any condition, and while one may not always wish to use them, he would do well to keep in mind this extra method of gaining information in case other means are insufficient.

The book is well arranged and beautifully printed. It is a distinct contribution to urological literature.

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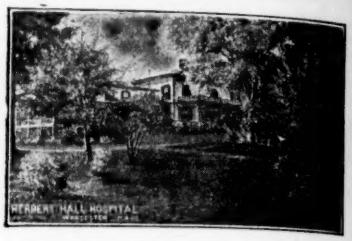

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